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By L. J. Hathaway

Trapping a Couple of Killers
By A. P. Chambers

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F. C. Payne	197	196	393
Virgil Richard	198	195	393
G. R. Gawhen	199	194	393
R. H. McGarrity	195	197	392
W. L. Cocroft	197	195	392

The best score, 394, is a world's record.

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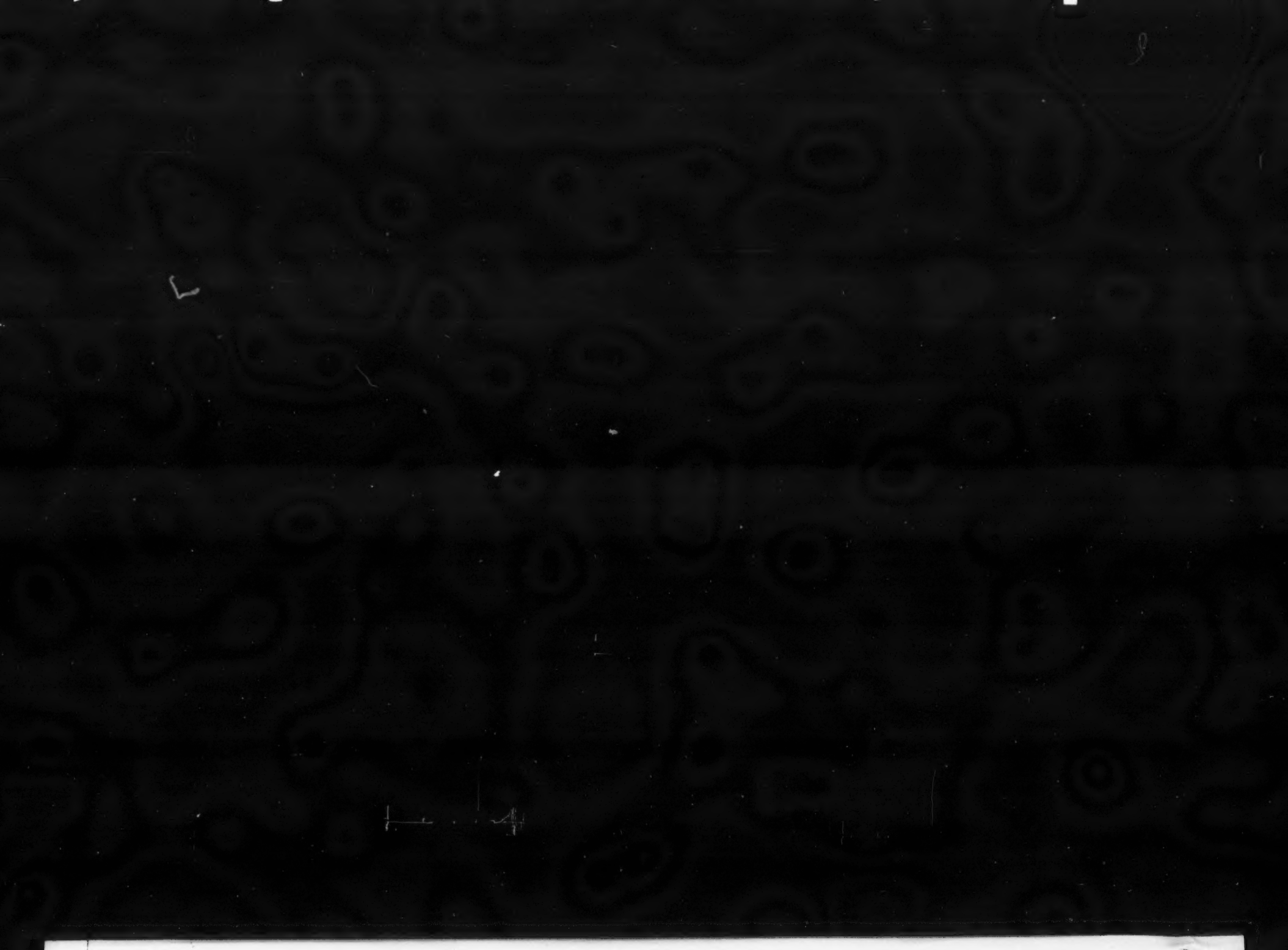

The AMERICAN RIFLEMAN

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New Bullet Wins The National Match Test

By Kendrick Scofield

HOW THEY FINISHED AT ABERDEEN

FIRST: *Lot No.* 1, *9-degree* 171 *gr. gilding metal boat-tail bullet, HiVel Powder Figure of Merit* 4.543 *inches.*

Mean Radii

1,000 *yds.*, 30 *targets*—5.685 *inches.*
600 *yds.*, 15 *targets*—2.260 *inches.*

SECOND: *Lot No.* 3, *6degrees boat-tail bullet, in cartridge following specifications for the* 1923 *National Match Ammunition. Figure of Merit* 4.622.

Mean Radii

1,000 *yds.*, 30 *targets*—5.700 *inches.*
600 *yds.*, 15 *targets*—2.466 *inches.*

THIRD: *Lot No.* 2, *9-degree* 171-*grain boat-tail bullet, Du Pont Powder, Figure of Merit* 4.696 *inches.*

Mean Radii

1,000 *yds.*, 30 *targets*—5.706 *inches.*
600 *yds.*, 15 *targets*—2.676 *inches.*

BULLETS with a 9-degree boat-tail—a new type which outranges even the long range Swiss missile—won the 1924 National Match Ammunition Test on the Aberdeen Proving Grounds Range November 5.

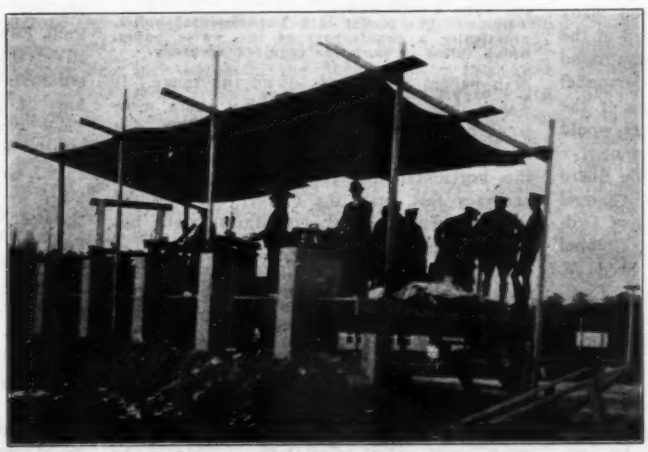
This year the test developed not only into a tryout of new military powders but of bullet designs as well. Entered in the contest were three lots of Frankford Arsenal manufacture. Lot No. 1 carried the new boat-tail bullet, which weighs 171 grains, driven by 47 grains of Hercules HiVel at an instrumental velocity of 2701 ft. seconds, an approximate muzzle velocity of 2750 and with a pressure of 49,000 pounds. Lot No. 2 also carried the 9-degree boat-tail but with a charge of 51.5 grains of a new Du Pont experimental powder known as No. 1145, giving an instrumental velocity of 2697, a muzzle velocity of approximately 2745 and a pressure of 48,740. Lot No. 3 conformed in both bullet and powder with the 1923 National Match cartridge.

There is little need to go beyond the Figures of Merit calculated from the Mean Radii and upon which the test was decided, to realize that the tryout was a neck-and-neck race, nor do the figures leave much latitude for choice between the competing lots. There was about .079 of an inch difference between the figures of merit for the victor and the tail-ender.

The means of the Extreme Verticals of the three competing lots also have a story to tell, which is perhaps even more interesting and enlightening to the practical riflemen. The averages of the Extreme Verticals were for Lot No. 1, the winner was 17.315 inches at 1,000 yards. The verticals for Lot No. 3 averaged 19.024 inches and the same dispersion in Lot No. 2 averaged 19.457 inches. Group diameters averaged in Lot No. 1, 18.112 inches; in Lot No. 3, 20.399 inches; and in Lot No. 2, 19.970 inches. All of which may be confidently expected to keep within the 20-inch V Ring at the extreme range.

Undoubtedly the most important and the most interesting feature of the Aberdeen Test, so far as Match riflemen are concerned, is the development of the new form of super-accurate long range bullet, known in the Ordnance Department as "Type A." For the past five years Government ballistic experts have been concentrating upon the problem of bullet profile spurred on by the performance of the Swiss boat-tail type, which has existed for many years and established ranging standards which our Ordnance Department for a long time tried with indifferent success to duplicate.

The progenitor of the 1924 National Match bullet was born in 1919, when what was practically a copy of the Swiss bullet was made by Major Wallace Clay at Frankford Arsenal, at the request of Major Glenn P. Wilhelm,



The Firing Line at Aberdeen, with the Mann barrels mounted on the foundation of what will be a shooting house.

who was then conducting experimental firings at Daytona, Florida. Test firings with this bullet, which had a 9-degree boat-tail taper with a slightly modified Swiss ogive, did not demonstrate very great accuracy. Later developments in the Ordnance Department produced the 6-degree boat-tail with the United States Service ogive, which became the Model 1923 National Match cartridge of unquestioned accuracy. The Model 1923 bullet increased the extreme range of the Springfield rifle from about 3300 yards, with the old flat base bullet to about 4500 yards. The Swiss bullet in the Swiss rifle, however, still outranged our combination with a calculated extreme range of 5500 yards.

Improved manufacturing methods at Frankford which permitted them to produce perfect 6-degree boat-tail bullets opened the way for further research in boat-tail bullet designs and some of our ordnance experts, who had been inclined to believe that the 10-degree taper was responsible for the inaccuracy manifested in the modified Swiss bullet tried out at Daytona hit upon the idea that perhaps the reason for this inaccuracy lay rather in the manufacturing methods followed at the time these bullets were produced. Accordingly a new 10-degree boat-tail bullet was made by combining the Service ogive with the Swiss boat-tail and ordered manufactured at Frankford. Here the use of correcting dies made possible the production of perfect boat-tail bullets and these were submitted for the Aberdeen test in two new lots of ammunition, to be shot against the 1923 National Match type carrying the 6-degree boat-tail bullet. Tryouts of these bullets previous to the Aberdeen test demonstrated great accuracy and greater ranging powers even than the Swiss bullet, the extreme range of the new National Match projectile being calculated at 5800 yards.

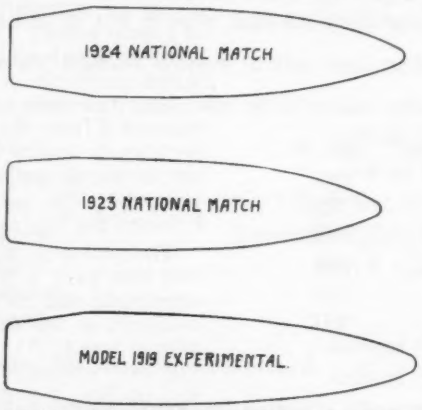
* * *

THE Ammunition Board for 1924 met at the Aberdeen, Maryland, Proving Grounds on the night of November 4 to perfect arrangements for the firing which was to be done the following day, and when the board members, with the Frankford Arsenal crew, and many ammunition company observers arrived at the firing point early the next morning they found a most complete range layout and personnel justifying, in the end, the confidence of the Proving Ground officials that the test would be run off efficiently and in record time.

There were present: The Ammunition Board for 1924, consisting of: Brigadier General Colden L'H. Ruggles, Assistant Chief of Ordnance and Chairman of the board; Colonel C. E. Stodter, Cavalry; Colonel Fred M. Waterbury, New York National Guard; Commander Carl T. Osburn, U. S. Navy; Major Littleton W. T. Waller, Jr., U. S. Marine Corps; Major William S. Fulton, Coast Artillery Corps; Major Glenn P. Wilhelm, Ordnance Department; Major Lee O. Wright, Ordnance Department; 1st Lieut. Grosvenor L. Wotkyns, Infantry; Mr. R. V. Reynolds, Mr. K. K. V. Casey, Colonel O. T. Horney, Major J. S. Hatcher, Captain L. D. Lewis, Mr. George Schnerring, Mr. Charles Hogue, Mr. Sam Schnable, and Mr. Frank Wilson, of Frankford Arsenal, and these observers: Sherman Lloyd and R. G. Woodbridge, of the Du Pont Company; L. C. Weldin, Henry N. Marsh, and C. S. Landis, of the Hercules Powder Company; Captain J. M. Hatcher and J. C. Gray, of the Ordnance Department.

The platform for the Mann barrels turned out to be the foundation and first floor of a shooting house which will be completed in a few weeks. In order to get clearance over the uneven terrain of the range to targets 1,000 yards away, it was found necessary to raise the floor of the shooting house some seven or eight feet above the ground level. This necessited concrete piers for the Mann barrels, which were considerably taller than those customarily used.

With Schnerring, Hogue and Schnabel to work the Mann barrels, and Lieut. Wotkyns in the pits, the firing started about 8.30 o'clock. A drizzling rain all but obscured the drab papers 1,000 yards down the range. It was a dull, dreary morning, but there were some compensations—not a breath of air was stirring, a condition immediately influencing the horizontal dispersions. In fact, for an accuracy test, once the barrels were trained on the targets, better conditions could not have obtained.



Profiles of the development of the 1924 National Match bullet.

Above: Section of the "Type A" bullet which won the Aberdeen test. This bullet has the Service ogive and a 9-degree boat-tail 9-10 of a caliber long. Its length over all is slightly greater than in the 1923 bullet. This bullet differs from the Swiss type in that the degree of boat-tail is slightly less and the ogive of somewhat fuller section.

Center: The 1923 National Match bullet with 6-degree boat-tail 7-10 of a caliber long, the successful manufacture of which for last year's matches pointed the way to the production of the Type A 1924 bullet.

Below: The Model 1919 Experimental bullet, practically a counterpart of the Swiss bullet, which failed to show the required accuracy.

In spite of this, the gunners failed to satisfactorily align the Mann barrels by bore sighting and it was not until a clinometer was brought into service that the groups were properly located on the papers. It was suggested that the peculiar pier construction on which the Mann barrels rested might have had something to do with this difficulty, but the final results of the test left so little to be desired in accuracy performance that this was discounted.

The first practice targets fired disclosed the fact that while Lot No. 1 with the 9-degree boat-tail bullet and HiVel and the 1923 National Match type were behaving about as good as ammunition is expected to behave; Lot No. 2, loaded with the Type A-9 degree boat-tail was producing something entirely original in National Match ammunition. Every shot developed a huge muzzle blast, which even in daylight ringed the Mann-barrel muzzle with an 8-inch ring of whitish yellow flame very similar in appearance to heat lightning. Inquiry developed that the so-called 1145 Powder which had developed such a spectacular character was nothing more formidable than our old friend Du Pont No. 17, with the grains cut in half and some other minor modifications. In spite of the muzzle flash, however, the barrel in which this powder was being shot was cooler to the touch than either of the others.

* * *

THE first relay—five targets from each of the three lots—with Major Waller directing the firing, hinted at the later excellence and the close race which was to be developed as th shooting progressed. Down at the pit there was evidence that high speed stuff was coming over, the crack of the missile as it broke the paper being noticeably louder and more viscious than that of previous lots of ammunition.

When the targets were taken to the measuring room, it was found that the Frankford custom of using opisometers had been abandoned in favor of the actual measurement of groups by engineer scales, and the Aberdeen crew showed remarkable speed and proficiency in this method, with the result that a very short time after the targets were run up from the pit by motorcycle messenger, the figures were available.

On the mean radius record, the Du Pont entry, in spite of its muzzle blast, took the lead on 5.616 inches, the National Match 1923 lot second on 5.698 inches and the HiVel lot third on 7.092 inches. On extreme elevations —one of the unofficial measurements taken for purposes of comparison—National Match led with an average of 17.42 inches, the Du Pont Powder second with 18.458 inches and HiVel third with 21.18 inches. The extreme horizontals—also unofficial—were significant only of the almost absolute absence of wind. They gave Du Pont 7.57 inches, National Match, 10.726 inches and Hercules 11.94 inches. Group Diameters, a series of figures taken especially in the interest of riflemen, showed National Match with 18.30 inches, Du Pont with 19.004 inches and Hercules with 21.82 inches.

The second relay, targets 6 to 10, inclusive, brought some material changes in the performance of Lot 1 (Hercules Powder) and Lot 2 (Du Pont Powder). Lot 3, the 1923 National Match type, registered an unusual consistency. The Mean Radii for this series of groups gave Lot No. 1, 5.223 inches, an improvement of much better than an inch, and to Lot No. 2, almost a corresponding falling

(Concluded on Page 19)

Walter Roper's Circular Gun

By Captain Edward C. Crossman

EVERY now and then there bobs up that optimistic individual with the solution for the all-round gun problem, which is one of the most solved and least settled problems we have in the grand old shooting game.

Mostly the solution hinges upon reloading the cartridges, which is as a solution is not much, if any, because the proportion of reloaders to ammunition buyers pans out about two bits to the cubic yard, or say, a thousand plain ordinary ignorant and busy shooters to one reloader. We are pleased with the presence of a reloading nut, such as I am and have been for twenty years, about as often as we are pleased with the enthusiastic fly-tying and rod-winding fisherman. Both make much noise like the festive bullfrog, but compared to the large and silent vote, don't number a whole lot.

If we do admit the reloading solution then the all-round rifle range from the meek and gentle .577 bore Cordite, which admits of loads from the elephant destroyer down to the ferocious digger squirrels, through the gamut of calibers down to the .25-20.

Most all-round guns prove entirely satisfactory when their gyrations settle down to one class of game or shooting, because I have yet to see one shotgun, rifle, or pistol which did not work out asa fine quail gun when used on quail.

My own opinion is that when sticking to plain ordinary commercial ammunition buyable in the average store, the .25-20 with the new ammunition, takes in more territory than any rifle yet with us, while in the shotgun line a 6½ lb. 20-gauge will come as near to filling the game shooter's needs as one gun can fill them, in spite of the theoretical superiority of a very heavy 12-bore which obviously can be used for smaller game than ducks, etc. Because the all-round gun ought to be considered not only from the standpoint of the range of its use from top to bottom, but from that of the number of times it is likely to be used on the various sorts of game.

Wherefore while the .25-20 won't kill moose, neither will a good moose gun, without reloading, work very nicely on the cotton-tail and the wild fillabaloo bird, and we get so many more shots at the cottontail and the said fillabaloo bird than we do at moose.

Likewise while the 6½ lb. 20-bore gun will never win the Grand American Handicap, it will go with you over hill and dale without making you feel like a blooming jackass in the weight you are packing, it will hoist a neat ounce of shot through the air in Remington, Peters and Western loads, and it will mostly kill all the ducks you have skill enough to hit.

You may well forget the trap game in your consideration of an all-round shotgun, because if you think you can sashay into that game with anything but a heavy gun made for srapshooting, and ever get back the price of your entry, then you have several more trap shooting experiences coming to you.

Up here in the backwoods, where there is not one human being—outside of some stray prospector—and not one house for a distance of 50 miles over the Siskiyous to the south of me, the all-round pistol is of more interest to the backwooders than the all-round backwoodsman, as a rule, when not packing his deer rifle, gets out with an ancient and disreputable shotgun when he wants little game. He is not very fond of this because shotgun shells at a nickel a shot don't offer enough reward in meat unless a ground-sluice chance offers itself. It is a plain case of economics with him.

The pistol or revolver is a favorite weapon with the backwoodsman whose work or inclination calls him into the hills, and he doesn't carry it for target practice either. A great many deer fall victim to the pistol or revolver in the two hands of the hill-hunter, such as the prospector or the chap doing his assessment work on some pipe-dream of a mining claim which goes $3.50 to the ton of ore which would cost $10 per ton to mine and haul to the railroad.

I say the two hands, because this is the accepted way to shoot a pistol to get results. A man using only one hand is looked on about as a man would be who shot his rapid fire string standing instead of kneeling or sitting as the regulations allow.

The Luger, when they can get it seems to have the call, chiefly because of its high velocity, and greater killing power. Personally I wouldn't give one hell-room because I have yet to see one with a good pull; which did not devote part of your trigger finger energy against the guard; which was not muzzle-light and shaky, not to mention failing to hump down where it belongs now and then. Mostly with a Luger you haul out about one inch of slack, the finger curving more and more around that foolish wide trigger guard and frame, and then when you have given up all hope of anything happening, bang, she goes.

Regardless of the ballistic virtues of that very high velocity cartridge of the 7.65 and 9 mm. Luger, it is my own experience that I can do so much better shooting with a revolver of decent pull that I'd let the other fellow have his velocity and his hump-up Dutch gun.

My "pettest" revolver is a tough looking war finish Colt .45 made for the Army in 1917, chambering the .45 automatic cartridge, and which I took from an arms chest on the pistol range at Caldwell after it had been used all through the matches, paying the Ordnance Officer some eleven bucks for it in preference to a brand new and much nicer finished Smith & Wesson .45, merely because trial showed that the S. & W. gun would saw my thumb off at the crotch in about fifty shots.

I sent this disreputable weapon down to Colt, and Fitzgerald, after fixing it up, reported that it was one of the most unusual shooting revolvers he had tried and that in shooting through the course for that year of 1919, he had made 299 ex 300 with the said gun.

They put checking on the straps and trigger, which I like—both of 'em—and Officers Model finish on the working parts of the gun, and a pair of checked wooden grips, but otherwise it remained the same rough finished war gun which came grinding out of the big Colt Armory in war time for war need.

The gun has a "Colt" pull of 3¾ lbs. and an action as smooth as glass, and unlike most fixed sight revolvers, shoots where you hold it—that is, it shoots where I hold it, which is different again—when I hold it, which is still more different.

It is a handful, and with its 2½ lbs. of weight and its hand-filling grip, and its light, smooth pull, it comes as near to shooting without much human aid as any revolver ever made, even if it does look a trifle ill-matched with its handsome grips, and its war finish. The fellow shooting it comes to the conclusion that the .45 automatic cartridge is not so far behind the .38 S. & W. Special as folks would have you believe, and when that coy little pill pushes aside a half-inch portion of the target and impinges on the 3 ft. fir tree where my targets are tacked up, that tree shivers and shimmies from truck to garboard strake. Tap a deer in the shoulder with that bullet and I fancy that you wouldn't have to write him a note and call his attention to the fact that you'd shot at him.

However, much as I like this big gun and much as I shoot it, it is not an all-round pistol by any stretch of the imagination, it leans too heavy on the bass end of the scale. Also, it is somewhat weighty to tie to what holds up your pants if you don't wear suspenders, and day in and day out it would remind you that it was along on the trail.

Five or six months ago I mentioned all-round gun to Walter Roper of Smith & Wesson, the Match-Par man who worked out about the only attractive system of civil war in a pistol or rifle shooting club without going to outside layouts to get a little excitement.

Walter wanted to know—in this long distance discussion—if I'd ever thought of the .32-20 as such, and went on to say that he used to carry a .32-20—sure an Iver Johnson—with a spare cylinder in which to use the .32 S. & W. and the .32 S. & W. Long. The change as you know is done by merely turning out the screw on the right side of the

frame, above and forward of the trigger and slipping out cylinder, crane and the appendages.

After a while, said Walter, he found that the .32 S. & W. and the Long of the same family shot about as well in the standard .32-20 cylinder as in the cylinder made for it, and he quit p acking around that extra six chambers for that reason.

The all-round features, he urged, lay in the fact that the gun, normally firing the .32-20 metal patch, soft nose, or lead bullet with a velocity in 6-inch revolver of 954 ft. secs. and wallop of 232 ft. lbs. would also use with good enough accuracy for little game up to 20 or 25 yards the .32 S. & W. and the .32 S. & W. Long, the first with its 85 gr. bullet, 652 ft. velocity, and only 75 lbs energy, the second with bullet of 98 gr. velocity 706 ft. and energy of 108 ft. lbs. Both of them are also made in metal patched instead of lead bullets, and the twain have killed more good men than any other cartridge because they were the food used in most of the pocket revolvers of days gone by, particularly in the cheaper variety of gun.

The .32-20 cartridge is made in a number of different forms, from the black powder lead bullet pioneer, to the smokeless lead, smokeless metal jacket and soft point, and is made by Winchester with bullet of 115 grains, and by Remington with bullet of only 100 grains.

The revolver will also chamber the .32-20 High Velocity and the .32-20 Remington Hi-Speed, both of which develop from 25,000 to 30,000 lbs. pressure, and if these cartridges don't fancy the arrangement of the chambers they will rearrange them to suit themselves. It seems impossible to keep yaps from using them in revolvers in spite of the poison label or the box, "Not for revolvers." As I think I remarked before I came upon a person in the basement range of a sporting goods store, shooting .32-20 High Velocity ammunition in a heavy Colt revolver. After two shots, and the pleasing sight of the three-foot flash of blue and yellow flame which spurted from every pore of the gun at each shot, I went right away from that place.

It was this variety of nut which compelled Smith & Wesson very lately to put a new type of heat-treated alloy steel cylinders on their revolvers, some such combination as the chrome vanadium of Henry Ford fame. Some day some bird is going to put a Remington Hi-Speed cartridge into one of the Spanish imitation S. & W. revolvers and pretty shortly thereafter he's going to hear the angels sing, provided, of course, he'd led that sort of life aside from being an ediot.

So Walter kindly sent out to me his 32-20 pet and the spare cylinder, and I have been strolling out into the clearing every other day or so, and pushing a few bullets through it of the various sorts which fit this gun. The process is made considerably easier by the fact that I don't have to take one street-car, one ferry boat, another street-car and then walk three miles to get to a range. The trouble entailed is that of walking 25 steps from my front porch, with never a copper or a neighbor to say me nay.

The gun is one of those pretty Smith & Wesson babies with 6-inch barrel, and the new type of sight which the S. & W. folks have proved to cut down sighting error about 100 per cent as compared with the bead, and which is therefore standard on most of their fixed sight guns. This one is the target variety, however.

It is as smooth in finish and as graceful in outline and as high in polish and as deep blue in color as my big war Colt is not, although at that it has nothing on the Colt in smoothness of working, and is not quite so good in the pull department. The 2 lbs. of weight would be a bit easier to carry around than 2½ lbs. I have never seen a Smith & Wesson grip which fitted my hand as well as the Colt of Officers Model or Army Special or New Service type, but the S. & W. is kind of a pretty gun to paw over at that with its handsome finish, and its unquestionably superior front cylinder lock arrangement.

Concerning the original gun with which he made his tests, Mr. Roper writes:

"I do not know how many thousands of these cartridges have been fired in this gun but I can see no gas cutting nor do the chambers show any wear. I am sending to you targets as follows: 5 shots 12 yards .32 Short S. & W.; 5 shots, 12 yards .32 S. & W. Long cartridge; 12 shots with US low pressure 32-20 smokeless; 5 shots 32-20 WRA High velocity."

These targets and others sent out were plenty good enough to demonstrate that Walter was right as to the accuracy obtainable up to 20 yards with the little Short and Long. As Mr. Roper says, "Certainly it is the nearest thing to an all-round pistol I have found, and while of course the .38 Special is our favorite, it is an expensive gun to shoot, and there is no good squibb load for it."

I am not a person to sit in judgment as to the relative accuracy of types of pistol, the chief trouble being that the makers don't put any place for a sling-strap, but I cannot see that the .32-20 low pressure cartridge is any poorer shooting than either of the two automatic .22 pistols I use quite a bit over the same ranges.

About 15 yards seems to mark the accurate limit for the little S. & W. Short, the Long shoots as well as the 32-20 low pressure at 20 yards.

There is little difference in point of impact between the Winchester loaded low pressure .32-20 and the two little revolver cartridges at 15 to 20 yards. Shooting shows more difference between the Winchester loaded .32-20 low pressure smokeless, and the Remington 100 gr. smokeless load, which although higher in velocity, at 20 yards strikes 5 inches lower than the Winchester cartridge, a queer example of whip or jump. In the 32-20 rifle at 50 yards the Remington cartridge strikes 5 inches higher than the Winchester.

The Winchester is the more pleasant of the two, because although not marked "High Velocity" the Remington cartridge has a most emphatic and ear-splitting report, and shows plenty of flame when the sun has departed from the scene.

As will be noted from Mr. Roper's remarks, he tried the Winchester High Velocity load in the gun, the target being good and indicating that he either has a lot of nerve or much confidence in that gun.

If you have not tried one you'll be tickled with the shooting of a .32-20 revolver in that there is little recoil, but still a most emphatic and vicious crack. If the gun kicked as hard as it talked, it would be worse than the .45. It is a constant surprise to find so little movement to the revolver in view of the noise.

The report of the little .32 S. & W. makes you laugh. It is a peculiar sepulchral hollow "Pack" like a fire-cracker in an empty barrel, with a metallic tinge to it like the sound of a Stokes mortar propelling charge. It is not loud enough to bring the farmer down to his meadow lot, or to make the constable prick up his ears or the game warden turn off the road as he goes by—if you happen to be that sort of a girl.

The little runt would be just the thing for use on these fool-hens who tempt providence and a meat-hungry hunter by sitting on a low limb and talking like an igitated young hen of farm-yard sort. There is a lot of work of the sort around a camp in the woods or hills where about 30 ft. is the limit, and it is not necessary either to notify all the game in that township that you are with it, or to shoot the back side off of what you plan to add to the mulligan.

The backwoods hunters up here are quite tickled with the gun, and their judgment of a side-arm being based solely on its presumed meat-getting ability. I give their ideas considerable weight in such matters.

I know one chap who has killed several deer with his .32 automatic pistol, which is my idea of almost a total loss for killing game in the hills, both as to gun and as to cartridge. If he can turn the trick with that gun often enough to keep him wearing it, then the soft point metal patched bullet of 40 grains more weight, and the same velocity, fired from the much easier to shoot and more accurate revolver, ought to be still more efficient under the same conditions.

Tests of the special cylinder to handle the .32 S. & W. Short and Long cartridges proved that it did not develop the slightest increase in accuracy over the .32-20 cylinder used with the same ammunition, and after alternating the two for a week I retired the .32 S. & W. cylinder to Stazon.

Ballistically speaking, the .32-20 low pressure metal patch cartridge develops more punch in a revolver than any of the revolver or pistol cartridges under .38 caliber with the exception of the German Mauser and Luger cartridges. It is likewise only 11 per cent under the .38 S. & W. Special in punch and has a flatter flight, its velocity 954 ft. against 856 ft. and its punch 232 ft. lbs. against 257 ft. lbs. for the .38.

Without doubt the German Luger and

(Continued on Page 16)

Target Rifle Shooting in High Schools and Colleges.

By Walter R. Stokes

Part II.

WHEN firing is actually commenced it should at all times be carefully planned and regulated. Preliminary aiming, position, and trigger-squeeze drills, as later to be described in detail, should be employed before any real shooting is done. The supervising faculty member or some equally responsible person should be present when any firing takes place, and he should make an effort to master the technique of range management and of instruction in the use and care of the rifle.

Fig. 2.—The Winchester Single-Shot Musket

After a few good shots have been developed in a club they will generally be found very ready to assist in coaching less successful or experienced shooters, and their work along this line is of great value to themselves as well as to the others; it should be encouraged.

Usually in any community there are National Rifle Association Members, men of good character, and experienced target shots, who will be glad to give instruction in school and college clubs; in fact, at the present time many of the most successful clubs owe their success chiefly to the interest and efforts of experienced coaches from outside the school who are gladly lending their services because of their interest in the sport.

The type of rifle best suited to use in the gallery is a moderately heavy (7 to 9 lbs.) single-shot target rifle, shooting the caliber .22 short cartridge. A rifle of this description has weight enough to produce proper development of the muscles used in holding a rifle, yet it is not too heavy for most young shooters. The caliber .22 short cartridge is very cheap in price, yet is as accurate at fifty feet as any other of the more expensive cartridges. The single-shot feature mentioned is very important because experience has taught that the use of most repeating rifles in a gallery is really dangerous, since it is difficult to tell when they are loaded, while there is little danger from single shot rifles on ranges where there is enforced a rule of keeping the breach of the rifle always open when it is not in immediate readiness for firing.

There are now on the market three rifles of the type described: the Winchester Musket, Stevens No. 414, and the B. S. A. No. 12 (Birmingham Small Arms Company). There are obtainable, also, bolt-action repeating rifles suitable for gallery use (U. S. Government, Winchester, and Savage), and these are the safest of any repeating rifles for gallery firing because with them a rule of keeping the bolt drawn, when the rifle is not ready for immediate firing, can be enforced quite satisfactorily.

The Winchester Musket is issued to clubs by the Director of Civilian Marksmanship, and it has been found to be a thoroughly dependable rifle for gallery use.

All of the rifles which have been mentioned are equipped with a peep rear sight, adjustable both laterally and vertically, and all are adapted for use with the sling.

Fig. 3—The Stevens No. 414

* * *

What has just been stated indicates a mere outline of instruction. Detailed information on the various matters mentioned, and others, is presented in the following discussions, which are intended to be of value to both instructor and student.

Fig. 4—The B. S. A. No. 12

It will be noticed in these discussions following, that reasons are rather fully developed; that is done because the thorough rifleman must know causes as well as effects, and because high school and college students generally have a commendable curiosity as to the why and wherefore of things told them. It is believed, too, that the development of underlying reasons and principles adds greatly to both the interest and the educational value of any subject.

Safety Rules of the Gallery

In respect to gallery management it must be laid down as a rule that the coach (who is a member of the faculty or other responsible person) should always be present and directly in charge when any firing is being done.

A second rule to be observed by every person present on the range is that at all times when a rifle is not pointed toward the target in readiness for firing, the breech must be kept open. This is a matter of the greatest importance and the rule must be enforced with the utmost strictness by everyone. Persons not handling a rifle should be taught to observe those who are, and to invite instant attention to any carelessness on the part of the latter in failing properly to keep the breech open. While the breech is open an accident is impossible and it is easy for bystanders to observe that the rifle is unloaded.

There is another safety rule which must be enforced with equal emphasis and watchfulness, namely, that a rifle should never, under any circumstances, be pointed at another person, for, even though known to be unloaded, experience has taught that in nearly all accidents the person at fault knew (i. e., thought he knew) the rifle was unloaded.

These, then, are the rules for the safe management of a range: That a responsible person be always in charge; that the breeches of all rifles be kept open except when about to be fired; and that a rifle must never be pointed at any person under any circumstances.

There is nothing difficult about observing these rules strictly, and this is in fact being done at present in all well-organized clubs.

An Outline of Instruction

When the instructor takes a group of young shooters in hand he should do some preliminary work with them before firing is commenced. He should tell them something about the purposes and possibilities of target shooting, its attractions, the qualities which tend to develop excellence, the plan by which practice will be conducted, and the program ot instruction.

The first matter of practical instruction should be an emphatic and complete explanation of the safety rules. If target carriers are installed their use must be explained. The rifle and its principal functions should be described and illustrated and the principles of powder combustion and the flight of the bullet should be made clear. The methods and importance of cleaning the rifle demand close study. Considerable time should be given to the explanation of sights, sighting, and sight adjustment. The use of the sling and the prone position should be taught together. The matters of holding the face firmly against the stock, holding the breath, and trigger squeeze, must be covered. All this will require several shooting periods to teach sufficiently so that actual firing becomes advisable. If the student has a reasonable grasp of this instruction he is likely to get good results at once, when permitted to fire.

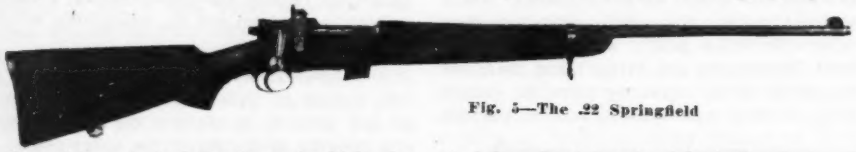


Fig. 5—The .22 Springfield

Before firing is undertaken it should be explained that there is nothing to fear and that fairly good results are to be expected almost from the start, in the prone position.

When firing in the prone position has been understood and some skill developed—usually after four or five shooting periods—the other positions, standing, kneeling and sitting, should be taken up in order. No new position should be taught, however, unless the known positions are thoroughly familiar.

The Mechanism and Functions of the Rifle

Before a mechanic commences to use a machine he should, if it is at all complicated, understand the nature and principles of its construction; if he does so he will have confidence in its use and will not misuse it; if he does not, he will use it timidly, without his full powers, because he fears unknown and mysterious mechanical troubles, and he is likely to misuse and disable it through failure to know the limits of its intended capabilities. The novice rifleman is in a similar position in respect to his rifle; consequently he should understand the mechanism and functions of his rifle before he undertakes to fire it.

A description of the Winchester Musket Rifle, as issued by the Director of Civilian Marksmanship to rifle clubs, will serve quite well as a general description of a rifle of the type suitable for gallery use. The cut appearing on page 9 indicates the important external parts of this rifle.

The terms appearing on Figure 8 used by the rifleman constantly, and they should be known and understood.

The essential parts of the rifle are the frame, breech mechanism, and barrel; it could be fired without the other parts, which are added as conveniences in handling the vital part of the mechanism, and to aid in controlling the direction of firing.

The barrel is made from a slightly tapered steel bar about twenty-eight inches long. A hole slightly less than .22 of an inch in diameter is drilled through the center of this bar from end to end. Six shallow spiral channels of equal width are then machined in the surface of this bore from one end of it to the other, leaving six spiral channels or "grooves" and six parallel ridges or "lands" in the bore. This is done to impart to the bullet a spinning motion which serves to steady it in its flight and to keep it going point foremost. One end of the bar, or barrel, is threaded and fitted to the frame, into which it screws. After the frame-fitting process the bore is chambered; that is, beginning at the breech end, the bore is reamed or bored out to a larger diameter for a distance equal to the length of a cartridge case. This is done to permit insertion of the case in the bore and is necessary because the diameter of the cartridge cas is greater than that of the bullet which it contains, and to which the bore is fitted. At this point work upon the barrel is completed ercept for polishing the bore, bluing, and mounting the sights.

Fig. 6—The Savage Model 1919

The frame, as its name indicates, is the frame around which the rifle is built. The barrel and butt stock are attached to it and the working parts of the rifle are contained within and protected by it.

The cartridge used in this rifle is the cal. .22 short, rim fire. It consists of a copper case, lead bullet, priming compound, and a small quantity of powder.

The firing of a cartridge occurs as follows: It is placed in the chamber of the rifle and the breech-block closed behind it; it is then imprisoned in the chamber. When the hammer has been cocked and has been released by pulling the trigger, it flys forward under pressure from the mainspring and strikes the rear end of the firing pin. This drives the firing pin forward and its point strikes the lower rim of the cartridge case a blow sufficient to dent it noticeably. On the inside of the base of the case is a coating of fulminate. This fulminate is a friction explosive; that is, an explosive which will explode upon being heavily jarred. The fulminate is exploded by the jar caused as the firing pin strikes the base of the cartridge; when it explodes a small, hot flame results, and this sets fire to the powder. The powder is not a friction explosive; no amount of jarring would explode it; but it is a substance which burns with extraordinary rapidity. When any material burns it becomes largely converted into gases which occupy a much greater space, under equal pressure, than the solid material did. The powder in the cartridge case is completely burned almost instantly, with the result that a volume of gases tending to occupy a large space is suddenly generated within the small space of the cartridge case. Under normal atmospheric pressure these gases would occupy a space very many times larger than that in which they are now confined; therefore in their confinement they exert a tremendous pressure in all directions in an attempt to expand it. But there is only one weak spot in the wall which surrounds them; this is the base of the bullet, which is inse-entirely set in the case and which can be quite easily pushed out of the case and down the bore. Consequently the expanding gases push the bullet out of the case and down the bore, and push it with great speed as all the expanding gases rush to escape in the only direction in which they can expand. As the bullet starts down the bore the lands or ridges of the rifling cut channels in it and get a grip upon it, compelling it to follow their spiral windings, and imparting to it a lateral spinning motion, so that when the bullet emerges from the muzzle of the rifle it is both traveling forward at the rate of several hundred feet per second and is spinning laterally at a rapid rate. The high velocity is obviously necessary to make the bullet travel any considerable distance and have any great striking force or penetrating power, and it has been found that the spinning motion causes it to travel through the air point foremost and without appreciable wobbling. This spinning of the bullet is a great aid to accuracy because by keeping the point of the bullet

Fig. 7—The Winchester Model 52

always to the front the air pressure against it, as it speeds along, remains constant, and the bullet is steered continuously in one direction, which would not be the case if it were turning end-over-end or wobbling badly, as it would but for the spinning motion.

When the bullet has started on its flight there are three factors which constantly operate to decreas its speed and which finally deprive it of all its original energy and bring it to a stop. The principal of these is the air-resistance which the bullet encounters. We can easily perceive that water offers resistance to the passage of any object through it, and, though not so easy to comprehend because the resistance is so much less, air in the same way offers resistance to the passage of any object through it; therefore air-resistance is one factor tending to slow up the flight of a bullet. In addition, the downward pull of the earth's gravity tends to rob the speeding bullet of its energy. And the third factor, of least importance, but interesting, is a vacuum pull upon the base of the bullet. As it travels along, the bulk of the bullet is constantly forcing its way into, or displacing, new air and as constantly leaving space which it has just occupied. The space just in the rear of the moving bullet has been left by it so rapidly that a temporary vacuum is created at that point. This vacuum naturally exerts a small backward pull upon the bullet, or, more correctly, lends force to the frontal resistance by depriving the bullet of its rear air support. The greater the velocity of the bullet, the greater will be the effect of the vacuum factor. With the cal. .22 rim-fire it is almost negligible.

The vacuum behind a high velocity bullet is so pronounced that when the air closes in upon it in the bullet's wake, there results an atmospheric disturbance of such magnitude that the air vibrations are reported to the ear as a very loud and sharp crack, distinct from the firing report, which is due to the atmospheric vibrations set up by the sudden escape into the air, from the muzzle of the rifle, of the gases of powder combustion.

Care and Cleaning of the Rifle

The cleaning and care of his rifle is a matter of primary importance to the marksman. It is an unfortunate fact that the metal parts of a rifle will rust very easily, and that the bore of the rifle offers a particularly serious problem in this respect because the products of combination which coat the bore after firing are of a chemical nature favorable to the development of rust.

The only difficult problem in the care of a rifle arises in connection with this fouling in the bore. There have been placed on the market many cleaning preparations designed to overcome the rust-producing effects of the products of combustion, and practically any of these will prevent rust if used promptly after the rifle is fired, and if the rifle is cleaned every day or two thereafter for a period of several days. No preparation can safely be left in the bore for a long period without cleaning.

The following list of observations on the cleaning and care of a rifle discloses the knowledge gained from my experience.

The cleaning outfit should consist of a cleaning rod with knob tip that may be unscrewed to permit the use of a brush with the rod; a supply of canton flannel patches cut about seven-eighths of an inch square; brass and bristle brushes; a cleaning preparation which will counteract the effects of fouling in the bore; and a rag moderately moistened with any light oil.

A newly purchased rifle should be thoroughly cleaned before being used.

After a rifle has been fired if caked lead or powder fouling appears in the bore it should be rubbed out with a brass brush. If no caked fouling appears, upon an inspection of the bore, a bristle brush may be saturated with the cleaning preparation and run back and forth in the bore two or three times, being pulled back slowly the last time. This is all the cleaning necessary in the absence of caked fouling. The rod should be wiped off before it is put away so that it will not have a greasy coating to collect grit, which might injure the bore. Before setting the rifle away all its metal parts should be rubbed over with a lightly oiled cloth. It should be set away in a warm, dry place—near a radiator or stove if possible. It is the part of caution to wipe out and re-clean the rifle within two or three days, because the products of combustion may not be completely neutralized by the first cleaning.

If a liquid cleaning preparation is used, the rifle should be set away, muzzle down or horizontal, so that the liquid will not drain down into the mechanism.

The sights of a rifle and the muzzle surface have an unusual tendency to rust.

A rifle tends to rust most during warm, humid, summer weather.

Before it is fired, the bore of a rifle should be wiped clean and dry by pushing dry patches through it.

Cleaning should be done from the breech of the rifle; cleaning from the muzzle leads to the destruction of accuracy through rod-wear of the bore near the muzzle.

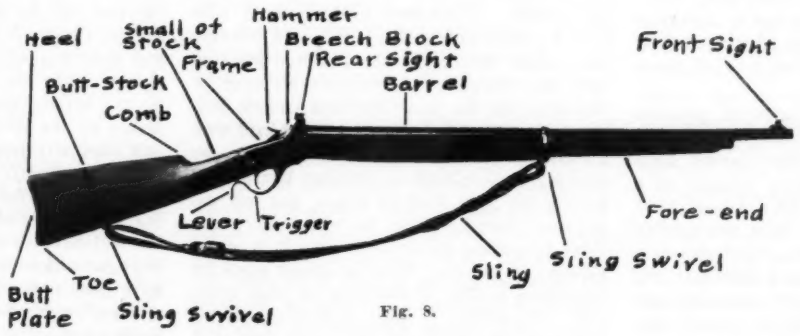


FIG. 8.

The sights and mechanism should be kept free from heavy grease and dirt.

A rifle will quickly rust where sweaty hands have touched it, unless wiped off with an oiled rag.

It is a good practice not to shoot more than sixty shots through a rifle without cleaning.

When a rifle has been cleaned, the bore should be inspected before the rifle is put away, in order to be sure that the bore is well coated with the cleaning preparation.

The best position in which to place a rifle for cleaning is lying horizontally upon a waist-high table or rack.

When rust occurs the oxidized surface may be crumbled and rubbed away, but an unremovable pit in the metal will be left.

Spare parts for a rifle may be obtained from its manufacturer, and a small amount of study of the mechanism will enable most riflemen to make their own minor repairs after obtaining the needed parts.

Before a rifle is fired the bore should invariably be inspected to ascertain that it is free from obstacles, because the presence of a bullet or cleaning patch in the bore will cause an undue pressure when the rifle is fired, and will result in a swelling of the bore that will be destructive of accuracy.

When a rifle is stored for the summer vacation it should receive a coating of heavy grease upon all metal surfaces.

A rifle will retain its accuracy through many years of continuous usage if kept free from rust.

The outstanding rule to be observed in attempting the proper care of a rifle is this: that it is not so much what technical methods are used as that there must never be the slightest negligence in carrying out the method adopted.

Slings can be made soft and pliable by the application of neatsfoot oil.

Sights and Sighting

When a rifle is fired if it were merely pointed toward the target in the manner of pointing a stick at an object, only approximate accuracy could be obtained, because in simply pointing, no one's sense of direction is more than fairly accurate. Consequently it has been found desirable to secure some aid to the accurate pointing of a rifle, and the problem has been solved by the development of the device referred to as "sights." This device consists of two distinct parts, a front and a rear sight. The front sight is attached to the top of the barrel, near the muzzle; the rear sight is attached to the frame, or sometimes to the upper tang.

Front sights are of three common types: pin-head, blade, and aperture.

Shotguns, Powders and Cartridges

By Capt. Chas. Askins

IT IS human nature to demand changes, and it is Twentieth Century human nature to demand improvements. Almost everything has changed in the last twenty years, and almost everything has improved. The modern hunting or the military rifle has little in common with the weapon of a quarter of a century ago. At that time riflemen were trying one scheme after another while endeavoring to obtain sixteen hundred feet or better of muzzle velocity. They can have double that velocity now if they want it; while combined with the bullet speed is finer accuracy and three times the old foot-pound energy.

Meantime the shotgun man has been plugging along, learning to shoot to be sure, for we have in our trap-shots the finest smoothbore marksmen that the world has ever known, but who can say that such men could not have shot equally well with the cartridges and the guns in use many years ago. Naturally this state of things has led to inquiries, sometimes caustic, as to why shotgun ballistics should have been marking time all these years.

So far as the writer can observe, smoothbore men are not unreasonable in their demands. They know that they cannot have three thousand feet of muzzle velocity in a shotgun; they know that they cannot have much closer patterns than they are getting now in guns that shoot into a 24-inch circle at forty yards; and they know that with the speed of the mark which they must take and with the nature of the missiles which they must fire at that mark, there will always be strict limitations as to range. Nevertheless, they hold that there ought to be some improvement.

I will briefly point out certain features of guns and ammunition which sportsmen think might be changed for the better. In the first place, he wants better and more even patterns—has wanted them since the first shotgun came into existence. Hardly a man has ever fired six successive shots from his gun at a pattern plate but has looked upon one of the patterns with misgivings. He knows that he must have even distribution or miss sometimes, and he doesn't wish to miss when he has held true. Maybe shot enough have gone into the circle, but there are thick patches and holes, and he is keen to know why that one pattern wasn't as good as the others, ammunition being the same and gun the same. If he ever elicits any reason, or if he ever reaches any conviction of his own as to why that load did not have as well as the others, the trouble will probably be ascribed to powder pressure, the one load developed an unusual pressure. What caused the powder to do that? Who knows? It might have been due to the wadding, to wad pressure, to crimp, to a shell case a trifle short, to a looser or tighter shell, to a top wad that was shaken out of adjustment to the shot column, slanted and so passed through the barrel. In any event, it was the ammunition and not the gun, apparently, yet some other gun would not have permitted the thing to happen, and there you are.

Be all that as it may, the shooter is asking for more evenly distributed patterns, and he wants them shot after shot without any great variation. He is asking for ideal distribution, each pellet just so far from the next one, a circle evenly filled and no shot outside of the circle. Will he ever get anything like that? Not in many a day, but he ought to have some improvement.

The next thing our shotgun man wants is a bit higher velocity, and with it due increase in range and killing power. He learns, if he has shot ducks very much, that he can often hit a fowl at a longer distance than he can kill it. Learning that the muzzle velocity of the average twelve-bore load is about 1250 feet, it occurs to him that if he could increase the muzzle velocity to about fifteen hundred feet, his charge would become effective at the distances he now hits and cannot kill. Not being able to procure a factory load with fifteen hundred feet of muzzle velocity, he may try loading such a cartridge himself. If he has the right kind of a gun, and will cut his shot charge a trifle, he will come pretty close to getting it, too, but, alas, it is at the expense of pattern. Now he cannot place his fast flying pellets on the bird, so what is the use? He's pattern is wider, it is more patchy, it is more irregular, comparing shot with shot. He hasn't got anywhere. In the same way the man who is out for a better and closer pattern can usually get it by reducing his powder charge, possibly by other means, but when he tries his fine pattern at the penetration rack he finds that it has fallen off in velocity, or if he tries it on game, the bird is not killed. He hasn't gotten anywhere either.

Probably both men have learned something through their experiments, learned the problem the ammunition builder is up against when he attempts to improve both pattern and penetration, securing either readily enough but not both in one cartridge. In truth, though much can be done with powder, wads and shot in right combinations, the man who obtains a close pattern at high velocity will require the right kind of a gun to start with, so it is not all in the ammunition.

Another thing which is bothering the shotgun shooter, which he wants changed at once, is shot stringing. He knows, and about everybody knows who has inquired into the matter at all, that a shotgun pattern doesn't travel in a compact body, but has a tail to it—maybe a tail forty feet or longer at forty yards. Somebody has told him that this tail maybe a good thing, because if the main portion of the charge misses by passing in front of the mark, the bird may fly into the "drag" and be killed anyhow. However, remembering that his fine pattern at reduced penetration wouldn't kill, and knowing that such pellets as have dropped twenty feet or forty feet behind must lack penetration, he doesn't put much faith in that being killed by the tail story. He wants that tail cut out, omitted, done away with.

He may be told and will be told if he keeps on being inquisitive, that the drag is the inevitable result of choke-boring. The choke narrows and elongates the shot column as it passes out at the muzzle—an elongation which continues to increase to the target. At six feet, as shown by instantaneous photographs, the column of shot from a full choked gun is about six inches long, and the pattern must continue to lengthen at the rate of nearly an inch to the foot, so that the normal length at 120 feet will be about ten feet. In addition to that, the pinch of the choke will knock out and deform a certain percentage of the shot charge, some say thirty per cent, though we do not believe that, and this thirty per cent makes up the balance of the drag. How can this shot stringing be obviated? By boring the gun cylinder. Who wants a cylinder? I don't; not for duck shooting. We must have the choke it seems, and if we must have it we will have to pay for it. All these years the gun-maker and the ammunition loader have been trying to get a full choked pattern without paying for it, and they haven't succeeded yet.

Somebody has told us that this thirty per cent which has been or is supposed to be knocked out by the choke is not the whole story. One ballistician says that every pellet of shot which issues from the muzzle of a choke bore has been more or less injured, every one has a dent or a "flat" on it, and perhaps several of them. The pellet injury is simply in degree and is never absent. Another ballistician declares that the "effective" pellets, those that have been so little injured as to permit them to fly in a fairly compact body, say those within the forward ten feet of the flying pattern at forty yards, do not constitute over fifty-five per cent of the total shot charge. The remaining forty-five per cent, according to him, are "inefectives," and practically useless in effecting a kill. He accounts for the seventy per cent or more of the charge which is found in the circle by stating that the ineffectives straggle up and mark the stationary plate, though they would never straggle up and mark the flying bird.

Now we may begin to see why the gun and ammunition makers have been marking time. The sportsman has asked for higher velocity, along with better patterns, along with a les-

(Concluded on Page 17)

That Old Sharps Rifle

by L. J. Hathaway

YES, it is a strange thing, this love for the grooved tube. If you have it, nothing but the spiral barrel will ever fully satisfy you. However fine the product of gun-making art, if, when you squint through the bore the twist is not there, you cannot escape a sense of disappointment, a feeling as of something vital lacking. But just let it have a rifled barrel, and, though it possesses real faults, a gun will cast its magic spell over you, will fascinate you and be a joy forever. You know how it is. Take my own case for example:

I am a one-gun man. Not that I lay any claim to the superior skill which this may imply, for indeed my attainments are quite mediocre. But being unable to afford the various rifles I would really like to own, what shooting I do is done, for the most part, with just one gun. This happens to be a Krag carbine; and with the variety of loads to which the .30-40 cartridge lends itself, there is no kind of game that I am ever likely to encounter which cannot be properly taken care of by this one rifle. Even for very small game I prefer it to a .22, because I have come to know it—and I like the feel and handling of a real gun, anyway. And so, on the whole, I ought to be, and am, very well satisfied. And yet there come odd times, now and then, when—but we are getting ahead of our story.

I have said that I am a one-gun man. Yet in a corner by the chimney, a few feet from the corner that the Krag has learned to call home, stands another rifle, a grizzled veteran of another generation—a .44 caliber Sharps, built to handle combustible cartridges fired by percussion cap. It was the original property of my grandfather; and is in splendid condition. Judged by every present-day standard this gun is obsolete; fine to hang on the wall over the fireplace, but good for little else. And yet, as I said before, there come odd times, now and then, when—well, when I just have a hankering to take the old war horse out of its corner and go down to the river and shoot it. And so I do. You see, it has the spiral barrel. When you squint down the bore the twist is there. It is the old lure of the grooved tube. You can't get away from it. Why try?

Fun? Say, when you drop that lead ingot down into the chamber, shovel a scoopful of soft coal in on top of it, put a cap on the nipple and cut her loose, you know you've done something. Every drop of pioneer blood in your veins receives an electric shock. You can see an Indian behind every tree. A herd of buffalo grazes on the distant plain. The smell of wood smoke greets your nostrils. You see the phantom of canoes in swift waters—feel the spirit of the forest!

It took some ingenuity to work out the reduced-load proposition for the weapon of my ancestor, in order to make it safe to shoot in settled country. I doubt if they used reduced loads in those days; but if they did, not having been alive then, I had to re-invent the process. At first I simply put in a light charge of powder back of the bullet, to see if the cap would fire it; but it would not. I tried raising the muzzle before firing, but still no results I knew my caps were old, but doubted if even fresh ones would do the work. The conditions under which the cap has to ignite a but partly filled chamber of powder are certainly not favorable Some sort of filler seemed the logical thing; but the question was, what? At last I thought of sawdust. Just the thing! I dumped about a spoonful of it into the chamber next to the bullet, and with a round wooden plug just small enough to enter, pressed the sawdust down until there remained just space enough for the desired charge of powder. Did she go? Well you just ought to have been there! When that gentle little cone of lead kissed the placid bosom of those sleeping waters, half a mile or so up stream, you might have thought someone had heaved a millstone overboard. And the boom and echo of ye old black powder—ah, I had glimpsed the True Romance!

With some interest I threw down the lever and opened the breech, to see what the effect of the sawdust had been. Of course there was nothing to see. The chamber and bore were fouled by the powder residue, but otherwise were the same as ever. I had made up one or two regular cartriges, using heavy wrapping paper for the case; but this proved to be slow and tedious work, and not all the paper was fully consumed in the chamber, what remained having to be fished out before reloading. Also this suggested the possibility of a spark remaining to ignite the fresh cartridge at an inopportune moment. I believe linen was the material originally used for these cartridge cases, and may have worked better than my paper. But still it was a job to make the things; and I did not need the quick-loading feature of fixed ammunition, anyway. Also I found that the separate loading operation had a fascination all its own.

Where you do not expect too much of it, but just like to knock around, burn powder and experiment a little now and then, one of these old-time Sharp rifles can furnish some real pleasure and recreation. And it might just possibly teach you a lesson or two in ballistics. Also you might find, after you came to know your gun, that you could kill some real game with it. And the cost of shooting is about as low as it can be figured. You "load your own"; and all the outfit you need to do it with is a bullet mold!

Some day—when my ship comes in—I may treat the old gun to a new barrel. The present type of bullet is not very efficient; and the throating will not take any other. And even an ideal bullet, after running the gauntlet of those canyon-like grooves—some seventeen thousandths of an inch deep—would not be ideal when it left the muzzle. And then the twist is only one turn in forty-eight inches. But splendidly built throughout, with a lock made like the mechanism of a watch, double set triggers and beautifully finished all over, were it granted what in fairness is really due it—a first-class modern barrel handling an efficient bullet—it would stand right up in the front row and shoot—that Old Sharps Rifle!

Trapping a Couple of Killers

By A. P. Chambers

ALTHOUGH various writers have written volumes of seemingly unbelievable stuff about the wily cunning of the coyote, yet the person who lives where these crafty animals carry on their depredations and who makes a study of their activities will find that half the truth has not yet been written. Many of the stories told about the almost human instincts of the coyote have been exemplified in the Wind Cave Game Preserve, where a crafty male and female of that species were working a few years back on the herd of antelope.

It was on the first day of February of the year 1918 that the warden discovered that coyotes were digging under the fence which surrounds the game enclosure. As this had happened quite frequently in the past and had always ended by the trespasser being caught, the warden naturally supposed that he would soon have the intruder. He placed his traps according to previous methods, but we was not long in discovering that he had something different from anything he had ever tackled in the trapping line. He ascertained by investigation that there were two of the animals, that one was considerably larger than the other, and that they roamed from one end of the preserve to the other.

It was not long before the antelope began to disappear, first at the rate of about two a week, but as time wore on it took three a week to satisfy the ravenous appetite of the coyotes. The warden, after vainly trying all the tricks that he knew in the trapping art, was forced to admit that he was unable to cope with the situation. He tried one or two local trappers who had reputations as "wolfers," but after working for a week or two they were forced to admit that they could do nothing to relieve matters.

The warden in his daily rides through the pasture would frequently see signs of the coyotes, but we was never able to get sight of them, and it was a long time before he was able to find any of the carcasses of the antelope, although he was missing the animals at regular intervals. The coyotes would eat up an antelope in one night's time, bones and all, leaving nothing but hair and now and then a piece of the lower part of the leg, including the hoof. During the snows, which generally melt quickly here, especially at that season of the year, the coyotes would either not run at all, they would confine their travel to the bare spots where the snow had melted, or they would travel in the elk and buffalo tracks which were thick inside the game pasture. This made it almost impossible to trail them down and shoot them.

As time wore on and the antelope kept disappearing, the warden notified the Biological Survey which has charge of the Federal game preserves that he was unable to do anything to stop the killing and that something must be done at once to prevent the extermination of the herd. He received a message a few days later stating that an expert trapper would be on the job just as soon as traveling conditions would permit his moving. The story of the catpure of these two wily carnivores, which took one of the best hunters in the Government employ at that time five weeks to accomplish, can best be told in the language of Troy C. Beach, the man who did the work:

"It was about the middle of March that I received a telegram from Inspector Bayer telling me to go at once to the Wind Cave Park with a hundred traps, as the coyotes were catching the antelope in the preserve. As I had not been working for the Government for a month or two, I had all my traps set in the Bad Lands over south of the Cheyenne River and was working on my own hook. Just at this time the river was gorged with ice, and it was nearly a week before I got all my traps pulled and packed ready to move. I left on March 23, 1918, with my traps, team and camping outfit, arriving at the Wind Cave Preserve the next night about 9 o'clock.

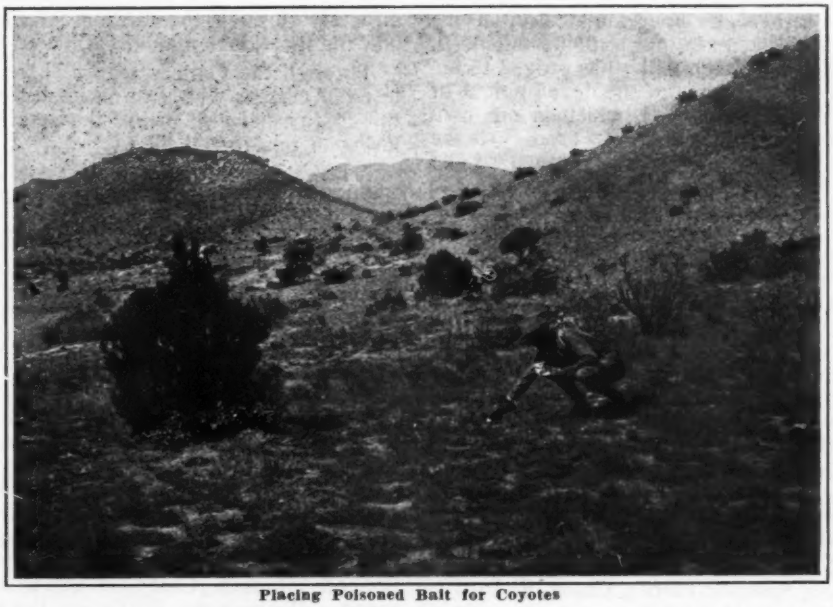
"The next day, in company with the warden, I looked over the grounds, viewing the depredations that had been committed and, had it not been for the assurance of the warden, would have pronounced it the work of gray wolves. There was nothing left of the antelope carcasses but hair and in one or two instances a piece of leg and a hoof. I examined the settings made by the warden and, while I could hardly class him as an expert in the trapping art, yet he is far above the average trapper and would take all ordinary coyotes. The covering of his traps was in the same method pursued by experts. The thing that he most lacked was knowledge of the habits of the animals—which is one of the first essentials in the trapping game.

"He told me of the various baits and schemes that he had tried to no avail and said that I was to have full swing and to use whatever system I wanted to, but that I would find that I was up against a tough proposition. In the next five weeks I learned how true his last statement was. In my twenty years of trapping predatory animals, I never ran up against two more cunning, crafty animals than those two coyotes. They caught thirteen antelope before I was able to land them.

"I spent the first three or four days getting my traps out, employing various sets such as the trail set, the bait set, the scent station set, and numerous others. I really expected to land one of the coyotes within a night or two, but I soon found out that I had miscalculated. The animals seemed to care for nothing but straight antelope meat and refused to bother the bait which I had prepared for their special benefit. They also quit traveling in the various trails where I placed traps, and they refused to come near a scent station. To make matters worse, the elk and buffalo moved over to the side of the pasture where my traps were set, and for about a week they kept me busy resetting traps in the trails.

"About the first of April there came a foot of snow, and I thought I would hunt down the coyotes with the rifle, but I really had no idea of the seriousness of the job which I had

undertaken. The preserve contains about four thousand acres enclosed with an eight-foot woven wire fence. Three-fourths of the acreage is timber and mountains, interspersed with canyons running from one side to the other. It is not an easy job for one not knowing the trails to get through when the ground is bare, much less when it is covered with snow. I tramped around all day and did finally run on to the tracks of the coyotes, but was unable to follow them. The snow had blown off in spots, and the coyotes seemed to know enough to keep in these places; so I gave up the 'still hunt' proposition and headed for camp. On my way I had to pass over a very rocky knoll, and while going over it I accidentally jumped one of the coyotes, but the jump put him out of sight. I shot at him anyway, but did not hit him, and saw no more of him that day.



Placing Poisoned Bait for Coyotes

"As I traveled on toward camp I found the carcass of an elk that had died during the storm, and as elk meat is one of the best baits for coyotes, I surely thought I would be able to catch them at this place. I told the warden to watch the carcass and to let me know the minute the coyotes went to eating at it. I wanted them to get accustomed to the place before I placed my traps. It was only a day or two before the warden informed me that they had begun to feed on the elk carcass. So I took eight traps out and made one of the best sets that I consider it is possible to make, a set that rarely fails to get the most cunning coyote that walks.

"Three traps were placed near the carcass of the elk, and the other five in the trails which led into the canyon where the carcass was lying. It was impossible for the coyotes to get to the elk without getting into a trap, but they did neither. They appeared to know at once that something was wrong and, although I took pains to conceal my work so that I do not believe any human could have told that the ground had been molested, the animals came up to within two rods of the carcass and passed around my trail traps as if they knew just where each one was located. I left the traps at this place over a week, but the coyotes, to my knowledge, never visited the elk carcass again. They went back to antelope diet once more, and all the baits I could devise did not appear to be any temptation to them.

"The situation was now becoming desperate. I knew that the Government was expecting results, and so far all the results attained were that the antelope were disappearing at a regular and rapid rate. I had been here now over two weeks and had tried all sorts of ruses, to no avail. One bait set in particular which I had never known to fail, brought no results here. This set is one that I perfected myself—at least I never saw anyone else use it in just the same manner that I do. It is a bait made of prairie dogs and is no good except in a dog town. There is a small dog town at the extreme southern part of the preserve, and here I tried prairie-dog bait. The coyotes actually came up and dug my traps out and threw them, but did not bother the bait. I tried all sorts of scents which I had, but the coyotes had found out that I was after them, and they kept away from everything I put out.

"The warden and I 'still hunted' for them for two or three days straight, but we were never able to get sight of them. It now appeared as though the coyotes had become afraid that I had given up the chase, and in order to let me know that they were still on the job they would set up a howl at night which would convince a novice that there were a hundred of them. They came up within two hundred yards of the warden's house. This I knew by hearing them at night and by seeing an occasional track. Thus over two more weeks had passed without results.

"At the west side of the game preserve there is one place where the fence follows along a side hill for about a half a mile. Here the hill comes out to the fence like the pitch of a roof, making a narrow place next to the fence where the elk and buffalo had formed a well-beaten trail. Near the south end of this trail an old tree, which had fallen years ago and was now completely decomposed, lay across the trail. The warden told me that he had seen coyote tracks in this trail at times when there was snow on the ground. So I decided to make a set in this old tree. As it was all rotten, it was not a difficult job, and I made a set that could not be seen by the most careful observer. I left all surroundings as natural as they were, and I must here remark that I never saw anything better to cover up a setting than this rotten wood. I went away feeling confident that if a coyote ever passed that way again, he was mine.

"This time I had not been mistaken in my judgment, for the second morning afterwards I had the bigger one of the two, the male. The warden had gone with me to look after the traps that morning, and to say that he was tickled would be putting it mildly. He was jubilant, and he was not alone. I felt greatly elated myself. The old coyote began rearing and plunging the moment we came in sight, but I soon made an end of him with a bullet from my twenty-two. He had matched his wits against those of the human once too often.

"The capturing of this coyote put a stop to the killing at once, and for the next few days I tried all kinds of tricks to get the other one. Hunger will in time tame the wildest animal, and now that her mate was gone, she could not catch an antelope whenever she wished. This was the means finally of bringing her up to my baits. I had out such a long string of traps now that I could not cover them every day, and one morning, as I was making the rounds through the pasture, I found one of the front feet of the female in my trap. She had been in so long that she had time to wear the meat down, to break the bone off and get away, which is a common occurrence where traps can not be looked after every day. This I knew would make her 'trap-shy,' but I also knew that she would have a hard time to catch anything to eat and that hunger would eventually make her an easy prey.

"I now took the old elk and calf, which the warden had down, and made some big baits for her, placing my traps right at the bait, for now I knew she must come up to eat. I caught her a few mornings later at one of the baits I had made of the calf about four miles from where I got her foot and within a half mile of the warden's house.

"On my return to camp that day I found a message from Inspector Bayer telling me that he was on his way to the Wind Cave Game Preserve to help with the work, as those coyotes must be taken at all costs. I immediately wired him that I had them both, but he had already left and arrived at the preserve the next day, where he made a personal investigation of conditions and was well pleased with results.

(Continued on page 18)

The American Rifleman

PUBLISHED SEMI-MONTHLY ON THE FIRST AND FIFTEENTH DAYS

By

THE NATIONAL RIFLE ASSOCIATION OF AMERICA

AT 1108 WOODWARD BUILDING, WASHINGTON, D. C.

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THE Ordnance Department in general, and the technical staff in particular, are to be congratulated upon the production of such an accurate long ranging missile as the "Type A" 1924 National Match bullet has proved to be.

One of the most gratifying phases of the development of this bullet is that the 9-degree boat-tail, which in our own weapon outranges the Swiss prodigy, is the work of no one officer or branch of the Ordnance Department. Not only did the technical staff and the manufacturing departments each contribute materially to the production of this projectile but several individual officers had a hand in solving the problem.

The Aberdeen Ammunition Tryout

The testing of the 9-degree boat-tail at Aberdeen demonstrated its accuracy as compared with the 6-degree boat-tail of last year's Match type, but it is likely that more illuminating data will be forthcoming from the International Match tests when the new boat-tail is fired against other boat-tailed and flat base bullets of de luxe commercial manufactrue.

If the new boat-tail maintains the accuracy standard it has already established, its long ranging qualities being already established to the satisfaction of our Ordnance experts, ammunition worthy of the possibilities of the Service rifle will have been produced.

WINGATE, Hudson, Spencer, Libbey, Casey, Richard such, and many more, are names to conjure with in the rifle shooting game, men of a past or present generation who are to a great extent responsible for the healthy, growing condition of organized rifle shooting.

Just when did they break into the game? Who was responsible for their taking up the sport which at that time held but a little of reward in the minds of the public at large?

Old Timers and Newcomers.

A volume interesting, indeed, might be written around the introduction of these men to the range. Someone, in all probability long since passed over the Great Divide, started them. Directly or indirectly, these men have in turn influenced others, the younger generation of shooters, to undertake the problems of the range, and of the education of the public to the value of the game as a hobby, a sport, and a builder of friendships.

Numbered among this younger generation are those men whose names will take their place under these others as the progenitors of the rifle shooting race. In the high schools, colleges, and community centers of the Nation at this time are the men who must take the place of the younger generation of shooters in carrying on the game and building up on the foundation already long established, who will introduce these youngsters to the range.

Mention anyone you will, present or past, who may be considered as the father of the game in his section, and the question presents itself "Who started him?" It is the ever-present problem of today—who will start the riflemen of tomorrow? It is a problem which can be solved without difficulty through the medium of the organized rifle clubs and the individual riflemen affiliated with the N. R. A.

Through the Gallery season there are many casually interested citizens who drop in for a few minutes. Generally this first casual visit means the making of a rifleman or the losing of one for all time.

A range laid out with some regard for the comfort of the shooters and the non-shooters, a cordial hand-shake, the air of a good-natured competition, and the friendly insistence that the visitor try his hand with somebody's rifle will sow the seeds for a healthy growth of the rifle shooting fever. A dismal, none-too-clean gallery and a curious "what are you doing here" stare, with a "please don't get in the way" attitude will lose your prospect forevermore.

That newcomer who is such a dub the first time he tries, and asks so many fool questions, may learn in a short time more than you know about the game. There may come a time when his name will represent an outstanding worker for the cause of better marksmanship. And if that be true, although your hard work with the rifle may have brought you little fame, and your seemingly thankless labors to build up the club may have resulted in no glory, you will have done your bit even as did the man who first induced Winder, Spencer, Hudson, Casey, et al., to try their hands on the range. Without the old-timers, the sport could never have attained its present portions. Without the newcomers, it can continue no longer than the life span of the men who are already in. You have much more to do than to learn how to shoot. What is your quota of newcomers for 1924?

IN THE November 1 number of "The American Rifleman" there was inaugurated a department known as "The N. R. A. News." This space has been set aside by the editors to be devoted to matters of general interest to rifle clubs and individual riflemen, whether it eminates directly from the parent organization or from some affiliated body of shooters.

N. R. A. News

For several years past the editors have from time to time received sundry "Black Hand" letters from club secretaries, who desired an opportunity of discussing their club activities for the benefit of other club secretaries. Now the opportunity is here. If the department is to be a success, it depends in the main upon whether club officials and individual riflemen make use of it.

The backbone of the department, of course, will be official N. R. A. announcements and general news. But that is not enough. If, in addition, it is kept filled with worth while comment and suggestions, it will be of great value to the shooting game. If it is permitted to become dull and uninteresting it will be a waste of good space in a magazine where space is at a premium.

The Shooters' Magazine

EDITORS

BRIG. GEN. FRED H. PHILLIPS, Jr.
KENDRICK SCOFIELD
T. G. SAMWORTH
Art Editor—CHARLES DUNN

Obtainable by subscription, $3.00 per year. $2.00 to individuals or members of clubs affiliated with the N. R. A. Canadian Subscription, $3.50. Foreign, $4.25.

That Constitutional Provision

By Russell G. Rodman

An Editorial For White Americans

I HAVE read, with much interest, various articles, appearing in sporting magazines, anent "anti-firearm legislation." Some of these articles contain caustic comments regarding the apparent disregard of the various legislatures for the Constitutional inhibition against infringing "the right of the people to keep and bear arms." In order, however, that we may not be lax in exerting ourselves to the utmost in preventing such legislation, it might be well for us to know just what construction is placed upon this particular section of the Constitution of the United States, and similar provisions of the constitutions of the several states by the United States Supreme Court and the Supreme Courts of the several states. Article Two, Amendments to the Constitution of the United States, is as follows:

> "A well-regulated militia being necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed."

All constitutions of the several states contain provisions like this, in substance, at least. Reference to decisions in which the matter has been directly adjudicated would, unfortunately, indicate that the doctrine of "stare decisis" (abide by former decisions), has definitely established the presumption that pistols and revolvers are not necessary or proper arms for the people to "keep and bear"; the above Article being construed by the courts as pertaining solely to military arms and excluding such "internal combustion" weapons as pistols and revolvers from the legal definition of "military arms." As an illustration it will probably suffice to quote from a decision of the Supreme Court of Texas (35 Texas, 473-474-476), as follows: "Arms of what kind? Certainly such as are useful and proper to an armed militia. The deadly weapons spoken of in the State Statutes are pistols, dirks, etc. Can it be understood that these were contemplated by the framers of our 'Bill of Rights?' To refer the deadly devices and instruments, called in the Statute 'deadly weapons," to the proper or necessary arms of a 'well regulated militia' is simply ridiculous. No kind of travesty, however subtle or ingenuous, could so construe this provision of the Constitution of the United States as to make it cover and protect that pernicious vice from which so many murders, assassinations and deadly assaults have sprung, and which it was doubtless the intention of the legislature to punish and prohibit. The word 'arms' in the connection we find it in the Constitution of the United States, refers to the arms of a militiaman or soldier, and the word is used in its military sense."

In construing this Article of the Constitution the courts unquestionably concur in excluding revolvers, pistols, etc., from the intention of the framers of the Constitution as constituting necessary or proper arms.

In view of the fact that what "side-arms" may have been in existence at the time the Constitution was adopted could not, in the wildest imagination, have been considered "military arms," it may well be that the men who drafted the Constitution did not have them in mind. But conditions have changed since the aforementioned document was ratified and adopted. In most respects the decisions of our courts have kept pace with the development of the country, even to the extent of reversing, or modifying, former decisions which, due to changed conditions, had become poor law. If the Constitution was drafted today would not its framers, in the light of the knowledge and experience gained in the recent war, be held to have included revolvers, pistols, trench knives, bayonets, etc., among the proper "arms" for militiamen and soldiers? Think they would. While, of course, men armed exclusively with pistols or revolvers are generally those whose duties will not, ordinarily, take them into the firing line, many branches of the service carry them as secondary weapons. The officers carry them and so do despatch riders, signallers, machine gunners, cavalrymen, etc.

Most state statutes expressly state that "The unorganized militia shall consist of all able-bodied male citizens." Surely we can assume that these, at least, must be "the people" whose right to "keep and bear arms shall not be infringed." BUT, it must be remembered, they must "keep and bear" nothing but "military arms" and, according to all decisions, this excludes our "hand-guns."

It is up to us to keep the "anti-firearm" fanatics out of the legislatures.

Just because some felonies are committed with a lethal weapon they are going to prevent the commission of all such felonies in the future by legislating against the weapon used in some cases. Yes, indeed! Just as the Eighteenth Amendment and the so-called "Volstead Act," designed to enforce it, have absolutely prevented intoxication in the United States and some parts of Minnesota. It certainly is to laugh! That is, that particular instance of such legislation is. Legislation against the possession of revolvers and pistols WILL deter most "law abiding citizens" (thus designated with a reservation as regards the aforementioned Eighteenth Amendment), from owning or carrying such weapons. But it certainly will not prevent the procuring or carrying of such weapons by the robber or burglar. He is a lawbreaker anyhow and what does he care for the infraction of one law more or less? He has, heretofore, expected to take some chances of finding his intended victim prepared for self defense. But the element of chance will be largely removed by "anti-pistol" legislation. All such laws should be entitled, "Acts to Insure the Safety of Persons Engaged in the Occupations of Burglar, Robber or 'Gunman' and to effectuate the Commission of all Felonies." If such laws won't very nearly insure such occupations, I can't think of anything that will. The life Insurance companies will rate robbers and burglars as preferred risks and the rest of us will be listed under "hazardous occupations."

These fanatics think they are going to accomplish something through the authority of such proposed laws will give them to imprison "suspicious characters" when found carrying concealed weapons. But are they? In most commonwealths this could be done today were the laws already on the statute books properly enforced. I am reliably informed that burglars, robbers, etc., do not carry guns unless they are "working." Will a police officer be supposed to stop and search every person he meets? I can conceive of a person being arrested under such a law providing his gun fell out of his pocket while he was standing in front of a policeman and struck the officer on a corn.

As regards other felonies, it is my impression that if a person is determined to commit murder the lack of a lethal weapon of the "hand-gun" variety will not deter him. I recently read of six murders, all reported in the same issue of an Eastern paper, and only one of them was committed with a gun. The others were committed with axes, ice-picks, rocks and clubs. I believe there were several felonies committed between the date on which Cain slew Abel and the year which heralded the invention of gunpowder. A very few of them are matters of history. If they had enacted a few "anti-firearm" laws they would doubtless have been prevented.

If they are determined to legislate, why not enact laws whereby a penalty of death or life imprisonment at hard labor would be inflicted upon conviction of ANY felony committed with a gun? I think that, then, any criminally inclined individual would hesitate considerably before using a gun in the commission of any felony, for the conviction of which, the punishment, by the use of such weapon, would exceed that ordinarily inflicted.

They could also accomplish something by legislating against the foreign "pot-metal" which is imported as alleged revolvers and pistols. I have now before me an advertisement, appearing in a sporting magazine, part of which reads as follows: "Blue Steel Army Automatic, .25 cal., $7.95; .32 cal., $8.95"; "Military Trench Automatic, .32 cal., 10-shot, extra magazine FREE. Just like you used over there, $9.75." What is your opinion of the publishers of a magazine that will accept an advertisement like that? Ye Gods! An "Army Automatic" of .25 cal. or of .32 cal.! And a "Military Trench Automatic" .32 cal. "Just like you used over there" for $9.75.

What we need right now is a campaign of education; one that will teach all of them the difference between the products of "Colt," "Smith & Wesson" and other reliable American manufacturers and the foreign counterfeiters.

A Little More Hand-Gun History

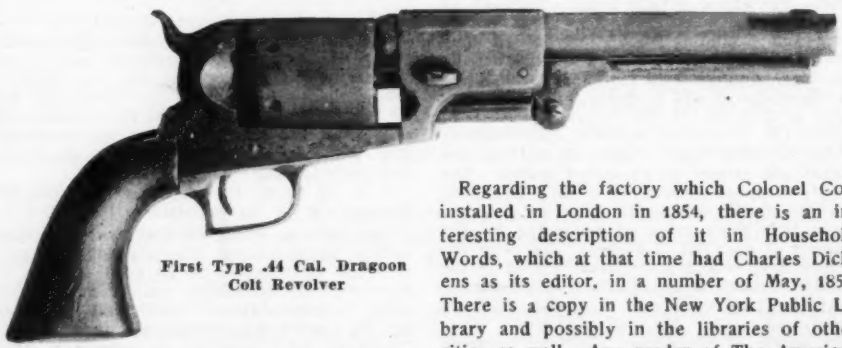
By Henry Walter Fry

HAVING owned and shot a good many different sizes, calibers and makes of cap and ball revolvers during this last twenty-five years or more, I was a good deal interested in Mr. Roy McHenry's able articles on Hand-gun History in The American Rifleman. There are a few points upon which I should like to comment.

Regarding the Texas Pistol, so excellently illustrated on page 131 of the A. M. for August 1st, Mr. McHenry may be interested to know that there is one of these old timers in absolutely brand new condition in London in the United States Museum, which is housed in the only remaining building of Whitehall Palace, the banqueting hall, which stands about half way down Whitehall, opposite the Horse Guards. It was from one of the windows of this building that King Charles the First walked out on to the scaffold erected in the street outside to undergo that summary amputation of the pericranium which he so richly deserved.

As to the Walker Pistol, which was made in the Paterson factory about the year 1840, I should be interested to know whether there is a genuine one actually in existence. Neither Colt nor Captain Walker were able to find one to serve as a model when they needed one in 1847, and Mr. C. W. Sawyer, in his second volume of Firearms in American History, in his description of this weapon says that no specimen was available for illustration. There is no doubt that it bore a close resemblance to the 1847 Model, which is often called the Walker Pistol, but this later model can be easily distinguished by the stamp "U. S. 1847" on the right-hand side of the barrel near the securing key, and by the stamp on the top of the barrel "Address Sam'l Colt, New York City," whereas, according to Mr. Sawyer, the stamp on the barrel of the Walker pistol was "Pat. Arms M'g Co. Paterson N. J. Colt's Pat." I do not know how the loading lever of the Walker Pistol was secured, but in the 1847 model first a little steel hook of a rather delicate construction was first used and then the improvement of a spring latch was adopted for this and all other models of Colt cap and ball pistols. I have seen 1847 model pistols, same with hook and others with spring latch on the loading lever. One of these old revolvers, fitted with the hook for the lever, was presented to the Melbourne, Australia, Public Museum when I was there by a woman who had not the least idea of its rarity and value. On the lock frame was stamped the words "C Co No 279," showing that it had once been in Government service. It had probably been brought to Australia from America at the time of the rush to the early gold diggings, and no doubt had seen some interesting adventures in, both countries before finding its present peaceful resting place.

In the illustration on page 9 of the A. M. for August 15 are shown two small model Colt cap and ball revolvers of .31 caliber which are described as 1851 model. No. 2 is called a belt revolver and No. 3 a pocket revolver. Now according to Mr. Sawyer's book both these are Pocket Pistols, Model 1849, the .31 caliber Model 1851 being without any loading lever and called the Police Pocket Pistol, the loading lever being omitted for convenience in carrying in the pocket. In one of Colt's original circulars which I have in front of me he divides his revolvers into three classes—Cavalry or Holster Pistol, Navy or belt ditto, and Pocket ditto, and the respective powder charges are given as 1½ drachm, ¾ ditto and ½ ditto. A little farther down on the circular the revolvers are divided into five different sizes, Army or holster pistol, Navy or belt pistol, four-inch barrel, pocket, five-inch barrel and pocket, six-inch barrel. It is, therefore, evident that Mr. McHenry has made a slight error in calling a .31 caliber Colt a belt revolver and I think he is in error in calling the two two .31 caliber revolvers with loading levers Model 1851.



First Type .44 Cal. Dragoon Colt Revolver

There are one or two small mistakes in Mr. McHenry's description of the 1851 Model Navy revolver, which was supposed to be caliber .36, and is so stamped on the frame. Actually, however, the caliber was nearer .38 than .36, a bullet of .375 diameter being a tight fit in the chambers. A .36 caliber bullet will drop clean through the barrel without being marked by the grooves at all, and when converted to breech-loaders these revolvers shoot the old .38 Long, the bullet of which is .375 in diameter, and I once had one of these revolvers made to shoot the .41 Long cartridge, the bullet of which is .386 in diameter. I had no difficulty in pushing this bullet through the barrel of an 1851 Navy Colt with a steel rod.

The pointed bullet used by the 1851 Model weighed, not 170 grains as Mr. McHenry states, but about 135 grains, at least, that is what one of them weighed on a Modern-Bond scale when I tried it just now. As a matter of fact, the twist of the rifling in these pistols which amounts to less than a quarter of a turn in the 7½-inch barrel would be much too slow to spin a 170 grains bullet of that caliber.

I quite agree with Mr. McHenry as to the fine qualities of the Remington cap and ball revolver, which in the simplicity of its mechanical construction was very much superior to the Colt, the barrel being fixed in the solid frame, the cylinder easily and quickly removable, and in certain parts of the frame having only one screw against the Colt's six. This also applies to the Whitney revolver, mentioned by Mr. McHenry and to the Rogers & Spencer shown so well illustrated. It has been my good fortune to have owned and tried at the target both Remington and Rogers & Spencer .44 caliber revolvers in brand new condition. Loaded with a charge of 35 grains of fine black powder, a greased felt lubricating wad and a round ball cast fairly hard from Ideal mould No. 45469, both revolvers have made from 6-inch to 8-inch groups at fifty yards. The deep, slow twist of the rifling of most of these old six-guns is exactly suited to the round ball, which I have always found to shoot much better than any conical one, and the more powder I put behind it the closer it would group. In modern revolvers on the other hand, the round ball will jump the quick shallow grooving with anything heavier than a very light gallery load.

Regarding the factory which Colonel Colt installed in London in 1854, there is an interesting description of it in Household Words, which at that time had Charles Dickens as its editor, in a number of May, 1854 There is a copy in the New York Public Library and possibly in the libraries of other cities as well. Any reader of The American Rifleman who will look that article up will find it extremely interesting. At various times I have owned Colt cap and ball revolvers which were stamped on the barrel "Address Col. Colt, London," showing that they were the product of the London factory.

The Whitney revolver mentioned by Mr. McHenry is another that I know quite well, having owned Whitneys in the .36 caliber Navy model with 7½-inch barrel and the .31 caliber Pocket model with 4, 5 and 6-inch barrels. When living in Melbourne, Australia, a few years ago there was an old gunsmith who had a big stock of new Whitneys which he retailed with bullet mould for $3.00 apiece.

The grooving of the Whitney has a very slow twist, eminently suited to the round ball, which it shoots with very fair accuracy.

The Le Mat revolver, with its central shot barrel, is also one that I know quite well, having seen and handled quite a number of specimens at various times, and I shall never cease to regret not having taken the opportunit ythat I once had of getting for $5.00 in the town of Bendigo, Austrlia, a Le Mat revolving carbine, the only one I ever saw.

Mr. McHenry mentions the Allen & Wheelock revolver as having a side hammer. Possibly some of them may have, but the one he shows on page 9 of The American Rifleman of September 15, which is the replica of one that I got recently at a sale here, certainly has a central hammer. The rifling of mine, which is .44 caliber, is shallower and quicker than that of most cap and ball revolvers, but the loading lever, combined with the trigger guard, is not nearly so efficient as the lever under the barrel.

At one time I was the owner of a .44 Starr single action revolver, such as Mr. McHenry shows on page 9 of The American Rifleman of September 1st. It will be noticed that the grip is very narrow in the upper part, which also curves back into the fork of the shooter's hand, and would be apt to inflict rather severe punishment on it on the recoil from a heavy load.

Mr. McHenry is quite right in saying that all the percussion revolvers "fouled rapidly and shot wild in that condition." With the unlubricated bullets supplied with most of them they most certainly did, as I know from actual experience. Half a dozen shots would foul them so badly that only a bristle brush and water would get them clean again, and it was not until I was told of the plan of using lubricated wads behind the bullets that I was able to get anything like accurate shooting from them. Using properly made wads one can shoot all day with full charges of black powder in these old time revolvers and have no trouble with fouling. The wads, which I make of greased felt, sweep the barrel clean.

One often hears people, who usually have never actually tried them, say that the old cap and ball revolvers will do as good shooting as the best modern ones. That isn't true, they won't; the pitch of their rifling is too slow. Properly loaded with heavy powder charge, lubricating wad and round ball they will make from six to eight-inch groups at fifty yards, whereas, a modern Colt or Smith & Wesson .38 Special will make groups half that size or less. In one of his books, Mark Twain makes a well-known desperado, "a matchless marksman with the Navy revolver," hit the button on a man's coat at twenty yards. "Well, I know from actual experience that that is more than that revolver is actually capable of. That is to say, if a Colt cap and ball Navy revolver were placed in a machine rest and a shot fired from it at a target at twenty yards and a button plced over that shot hole, I would lay odds that the next shot would clean miss that button. Pity to spoil a good story but the truth should come before everything.

A Slinger of the Southwest

By R. V. Reynolds

ESPANOLA, New Mexico, is an adobe town, down on the Rio Grande, where the Chama flows in from the west. In November, 1916, Forest officers met me there and we drove out of town behind a team of mules, toward the National Forest lands where the Chama heads.

Except for the companionship of old acquaintances and the brisk autumn sunshine, it was a tiresome journey. For miles above Espanola the road along the Chama winds between low, bare foothills dotted here and there with juniper and pinyon. Everywhere in the road the sand lies five inches deep.

The sand poured over the felloes. The mules resigned themselves to the inevitable and refused to be hurried. The pace was less than four miles an hour. Under such conditions conversation flags after a while and all hands settle down to rumination and tobacco. Once we passed four Mexicans, two men and two women, squatted over a fire. They were drinking their vile black coffee and eating sardines and crackers. Simple shepherd folk on their way to town.

At noon we turned out of the road and drove down to the water's edge. At this point there was a ford, and a few adobe buildings nearby. A surely Mexican cur came out and stood by, growling, while the boys unhooked the team and kindled a fire for coffee. Presently we felt better. Over the cigarettes I was just meditating a little pistol practice when something more interesting than pistols occurred.

A Mexican boy about fifteen appeared on the pebbly shore near the ford. He hunted around and picked up several pebbles to his liking. Then he pulled out a sling, placed a sizable pebble in the leather contrivance between the two thongs, and began to whirl it horizontally around his head, much as a cattleman swings a rope.

"Old stuff!" said I to myself. As a youngster I had made slings, carefully copying the design in the American Boy's Compendium of Sports and Pastimes. Not the rubber band variety, but the sort that slew Goliath of Gath. And my slings never worked—because I never knew how to work them.

But the Mexican kid knew how. At just the right point in his whirl he set himself and unwound like a base ball pitcher, at the same time letting go one of the thongs. The stone went out like a gray streak—an incredible speed for a throw—and at the same instant my ear caught a note like the hum of an angry bumble-bee. The stone struck a rock 80 yards away across the Chama, and burst with a pop like a .22 rifle. I began to understand how friend Goliath came to his end at the hands of the stripling David. One pop like that from a two-ounce pebble would be enough for anybody.

My slinging had consisted of merely swinging the stone in a circle and letting go the strap. Whenever it didn't bean me it went twenty or thirty yards. I was disgusted with slings and all that Goliath stuff, because I could throw twice as far without the sling. But the Mexican lad had a different technique.

He not only whirled but finished with a throw, and the effect was just as if his arm had been lengthened thirty inches. The theory of slinging became plain enough when I remembered how we used to impale green apples on a sharpened twig and by that means whiz them away at a speed that no ordinary throwing could equal.

Now my attainments in Spanish are rather limited. Once I tried to ask a Mexican girl where the postmaster was, and she only giggled and wrapped her face up in a black shawl and ran away. The by-standers assured me that I had merely inquired whither the post-office had be taken itself. That was some relief, because by the way the damsel beat it I thought sure she was going after her duenna, or whatever the thing is.

It didn't work that way with the young slinger. Maybe he didn't have any duenna, and I'll say he didn't need one as long as he could find pebbles. After a conversation mostly of sign talk he understood my interest in his weapon and gave quite a demonstration. He threw across the Chama easily. Then as I showed appreciation, he threw further and further up the hill on the further side, the impacts showing in puffs of dust. After four trials he sent one buzzing out of sight, over the brow of the opposite hill, which must have been fully 100 feet high. If that pebble didn't go 200 yards before it struck, I am badly mistaken—and that would have meant at least 250 yards on the level. If carping critics choose to carp at this statement, let them now begin. It is the best guess I have, and it can't be proved or disproved at this date.

His accuracy did not seem so good, judging by modern standards. Probably he was a tyro. Holy Writ says that David slang a stone fast enough to sink it into Goliath's forehead, which connotes both speed and accuracy. It was a sort of Swiss Match—miss and out. David either had to make a V or lose the match in most unpleasant fashion, and a chap can do remarkable things when he has to. For all we know, David may have won the Wimbledon in 1063 B. C. But in muzzle velocity he didn't have a thing on my Mexican.

Heavy Bullets in the 250-3000

By Malcolm Dean Miller, M. D.

IN SPITE of present-day efforts to convinceriflemen that the 7 mm. Mauser, with new bullet by Western, is the ideal all-around rifle, much still remains to be said in favor of the 250-3000. In the first place, the 1920 Savage bolt-action is a reasonably satisfactory weapon. In the second place, it can be bought without having to invest a "coupla" hundred in a hand-made-to-order Mauser or Springfield—the same financial handicap applies to the Special 25 or Whelen cartridge made from the 30-06 case, which is doubtless an improvement for those who can spare the extra hundred-and-fifty or thereabouts. It is, perhaps, to be regretted that Savage brought out what the able Cap. Crossman has dubbed a "peanut special" instead of making a full-sized action and necking down the 06 shell. From my own selfish, individual point of view, I must also regret that the "featherweight" idea was allowed to have full sway in the designing of this particular Savage model. Raised, as I was, on Massachusetts Rifle Association rules, and accustomed for many years to shooting off-hand with muzzle-heavy weapons, I find the shotgun balance and handling useful only for snap-shooting and a distinct handicap for deliberate shots—especially in a wind. J. C. Gray's 26-inch, rather heavy barrel with eight-inch twist, is perhaps a trifle too far in the other direction. However, I maintain, and several of my correspondents seem to agree with me, that the 1920 would be a far better all-around rifle if it were fitted with a 24-inch standard-weight barrel, as furnished on the 1899-C in 300 caliber. I made this suggestion to the Savages, who replied that it could be done, quoting a moderate price for the new barrel, but adding that it would leave only about 1/16 in. of wood in the forearm, hence a special stock would really be advisable. Another drawback in the factory standard is the slow twist—some give it as 14 and some as 12 inches. It was this slow twist which caused the Western people to concentrate on the 100-grain, first as a short exposed soft point and finally as an Open Point.

It took me a period measured from the introduction of the 250 cartridge in 1914 to the time in 1919 when I was tipped off that Western would bring out 100 and 110-grain bullets to decide to acquire the bolt-action gun. The 87-gr. always seemed to me a freak and not to be seriously thought of, even for deer, though perhaps an ideal woodchuck missile, and certainly not for anything larger than deer. It seemed, however, as if bullets corresponding in length and stability to the 170 and 100-gr. in 30 caliber should make the 250 nearly ideal for those who use a rifle mostly for chucks and at the same time would prefer a missile which would not explode on a twig or mess up all the meat by reason of its explosive effect. The 110-gr. short-exposed spitzer, as brought out by Western, looked good and is, to a certain extent, good in the regular standard Savage twist.

Maximum loads are a *sine qua non* with the 110-gr. bullet. I got the dope from both Western and Du Pont and found that the very heaviest charge which could be considered safe is 34 grains of No. 16, which gave an average M. V. of 2,700 and an average pressure of 47,000 pounds. In new Western cases, this load is quite safe; but repeated reloading had annealed my cases so much that I was forced to drop a grain. These loads shot very well at 600 yards at Perry in 1921, when Charlie Hogue kindly tried them out for me—certainly well enough to be called accurate at that range. They gave me about 2½-inch groups at 100 yards, prone without sling. F. H. Riggall reported similarly good results, though he used No. 15 powder, about 37.5 grains, if I recall the charge correctly. Riggall also has done considerable work with the 117-grain round-nosed S. P. of the Remington 25 Auto, either Dominion or Western bullets; but when I ordered from Western I received, through a mistake of the local dealer, the flat-point soft-nosed 117 for the 25-35 Winchester. On account of the fuller profie, I took the matter of loads up with Du Pont before assembling.

After a test, the laboratory reported for Lot 2 of No. 15 loads of 35.0 grains with a M. V. of about 2,499 and of 37.0 grains with a M. V. of about 2,664; pressures running 42,433 and 49,600 respectively. Some of my correspondents have used 33.0 grains of No. 16 with this bullet, but I have mislaid the ballistic figures, though I am sure that the pressure is somewhat over 50,000 lbs. without corresponding advantage in velocity. Theoretically, No. 15 should be better for a bullet of this weight, though not so good as No. 16 with the 110. Riggall found, when testing the No. 15—117 and Western factory 100 O. P's on the carcass of a cow, that the 117's went through, whereas the 100's remained in the carcass. This indicates that at the lower velocity possible in the case of the heavier bullet the upsetting is not sufficient to cause the bullet to expend all its energy on the animal. This might be an advantage in deer shooting, particularly in thick oak scrub, such as is found in some of the best deer counties in Pennsylvania, where the regular 250-3000-87 S. P. is practically uselesss, according to several of our club members. At any rate, a charge of 36 grains of No. 15, Lot 2, with the 117-gr. bullet, is within the limits of safety and does not spoil new cases.

So far, I have shot only a few of the last-named loads. They were put up in new Western cases with copper primers, and 5 out of 35 primers punctured. The fault was probably mine, as I did not weigh every charge, and my old Ideal measure won't handle No. 15 accurately enough to dispense with weighing every charge. However, I don't get punctured primers when using the Winchester 35 N. F. (purchased from the D. C. M. and identical with the Frankford Arsenal primer). I shot some at 600 yards and kept in the bull until the scope mounts loosened and caused me to climb out at 2 o'clock. A fair amount of accuracy was also shown at 300 off-hand—in which position I always shoot in matches calling for the sitting or kneeling position. I have no doubt that weighed charges of 37 grains, in new cases, with brass primers, would prove reasonably satisfactory for deer and even for close, open shots at moose from a canoe. At any rate, until I can afford to acquire a 35 or a 400 Whelen, I intend to conserve a supply of 110's and 117's for everything larger than chucks.

Gray's 25, figured in his recent articles on ballistics, would probably be a considerable improvement over the 250-3000, on account of its being designed for a bullet of good weight. Perhaps some manufacturer will take it up and give us a standard factory rifle for it—something around $60. Of course, now that I know that it has been done, there can be no reason why, when I get my heavy barrel, it can't be cut with a quicker twist. I am not crazy about 3,000 ft. sec. and explosive effect. I figure that the 30-06 is a better gun with 180's than with anything lighter. Similarly, I believe that a new 250, designed for 110's, would be a real and desirable improvement over the present issue with its slow twist.

Roper's Circular Gun

(Concluded from page 4)

Mauser cartridges, fired in such a fine gun as this Smith & Wesson or a good Colt revolver, would be superior to the .32-20, but in view of the drawbacks of those two Teutonic guns, I'd much prefer to trust to the revolver and this cartridge. Last week a neighbor of mine, carrying a Luger, started on a trip across the basin of Dead Timber Canyon to visit a little explored peak for minerals. A half mile from his starting point on the divide and in the open season he came across three big bucks less than 75 yards away.

When the meeting finally broke up, both by the gun going empty, and the bucks getting tired of the noise and going away he had just as much venison as when the fuss opened.

All of which is partly comment on trying to kill deer with a hand-gun of any sort, and on the sort of shooting possible with these hard-pulling, creepy-trigger German automatics which make poor pistol shooting worse.

One of the functions of an all-round pistol would be in letting deer and such game strictly alone except under unusual conditions of range and opportunity, not to say need, but for lesser game, and for this larger sort of game once in a blue moon I am inclined to think that Brother Roper is right, as usual.

Shotguns-Powders-Cartridges

(*Continued from Page 8*)

sened percentage of shot knocked out by the barrel, along with shot that flew in a compact mass without drag, along with a narrowed killing circle. Yet in practice it has been found that he cannot have a narrowed circle without shot injury, he cannot have a choke bore without shot stringing, he cannot have a higher velocity without reducing the pattern, through shot deformation if from no other cause, and he cannot have closer and evener patterns except with a lessened velocity and power. All that could be done was to balance one essential quality against another that could not be sacrificed, in an attempt to secure such balance as would lead to the greatest all-round effectiveness. When the builder did get his balance, and we cannot say that he did not get it, he stopped there, saying to himself, "good job." He may have been satisfied with his job, but we, the shooting public, were not satisfied.

The object of this article or series of articles is to point out wherein changes might be made in guns or ammunition which would lead to a certain amount of improvement. An Englishman with a good knowledge of the subject (Henry Sharp), holds that improvement can come from hardening the shot, from the use of shot harder than chilled, and he may be right. Sweeley holds that improvement can come from the use of metal wads instead of felt, thereby furthering uniformity of resistance, and uniformity of breech pressures. He may be right. He further holds that we cannot have high velocity, with a minimum of pellet deformation, without shielding the shot from contact with the barrel, and he may be right. These things—the hardened shot, the metal wadding, and the shot jacket might so add to the cost of ammunition as to make the devices prohibitive, and this nobody knows. I will confine myself here to such suggestions as will add nothing to the cost of ammunition and nothing to the cost of gun-making.

Let me make it plain to begin with that in guns for certain purposes, with ammunition for certain purposes, we are very well off as it is. The bulk of upland game is killed under thirty-five yards, plenty of it under twenty-five, and at such distances our guns are pretty apt to kill a hundred straight. It is only when we begin to ask for range and powder, for duck shooting or for the trap, should the rise be extended to twenty-five yards or farther, that a man becomes doubtful of his gun. A good twelve-bore gun, built right and bored right, with a charge to fit the arm, will take ducks pretty consistently at fifty yards. If means could be found to extend this range to sixty or sixty-five yards, the gain would be great, fooling all of those wary fowl that now seem to have a perfect knowledge of the range of a shotgun.

All the suggestions we make will apply or can be taken to apply to the twelve-bore. They could be made to apply to other bores as well, but the big bores have power enough now, both pattern and penetration, if anyone cared to use them. An eight-bore will give us all the range we need for wild fowl, but the eight-gauge is forbidden by law. A ten-gauge can be charged with five drams of powder and 1½ ounces of shot, even bigger loads have been shot from the ten up to two ounces of shot, but the ten-bore has almost been discarded. Smaller gauges than twelve can be given more power, too, but they are very effective at present on quail and such game, and at best could not be made to equal the twelve as duck guns. Quite an improvement in twenty-bore ballistics can be had by the use of a new powder adapted to the gun, and this will be described.

The first change we will suggest is that of the style and method of boring. Choke boring has led to the only radical improvement in shotgun ballistics within the memory of any of us, and if shotguns are to become more powerful the boring will have to be changed or modified. Granted our ideas were followed, there would be two classes of shotguns in twelve-bore. The first, our present style of gun, light in weight, narrow in bore for the gauge, moderately charged, adapted to the present style of trap shooting and to upland work of all kinds. Three to three and an eighth drams of powder and 1⅛ ounces of shot is enough for such a gun, except that the trap gun would use an ounce and a quarter, such an arm requiring pattern and not requiring velocity.

The second class of twelve bores would be heavy in weight, chambered for a long shell, bored large for the gauge, cut without cone or with a much modified cone, adapting the weapon to very heavy charges for the gauge. Such an arm will handle from an ounce and a quarter to an ounce and a half of shot, backed by four drams of powder, increasing the present range of the twelve ten yards at least. Such a gun may require a different powder from those now in common use, and this will be noted as we go along. It will not shoot effectively the light loads intended for class one, and the reasons for its not doing so will be given.

The present form of shotgun cone, the section leading from the chamber into the barrel, is a rather modern development of shotgun boring. Its purpose is to permit the use of shell cases of varying length short of the maximum, and to build up resistance, thus furthering the sharp shooting of a gun charged with moderate loads of powder and shot. Much thought has been given to the form of the cone by gun-builders, and it serves its purpose admirably, so long as light charges are used.

A chapter will be given to powders, for the man who doesn't understand the nature and action of smokeless powder will not get very far in loading his own cartridges or in selecting the best of those loaded by others. When we know more about powders we will understand why the cone should be there in some guns and why it should not be there in others. We may know, too, why the ammunition should be carefully fitted to the gun, since the gun once built cannot be fitted to the ammunition.

Rust

By M. Foch

IT IS my object to write a simple treatise on this subject and to omit all chemical and scientific dissertation, so that the man who has some fine weapons will know how to take care of them, and will know what to do in case they begin to rust.

Rust and rats are the two greatest menaces of civilization, and it is very difficult to combat either of them; for rust, if left alone, progresses and creeps along like a canker disease until it finally destroys the steel which it has attacked. This is found in all engineering operations and eternal vigilance is the only safeguard which can confidently be relied upon to prevent delconation from the effect of moisture.

My experience has been with arms of all kinds and with brightly polished surfaces of machines that rust on fine guns or pistols is by no means an indication that the weapon has deteriorated or has become inaccurate, unless it is allowed to go too far; in some instances the damage is more apparent than real.

One thing must be thoroughly borne in mind, and that is that rust can only be produced by two agencies which must work together, and they are air and water, but inasmuch as most water contains air, and most air contains moisture, it appears on the face of it as if only one of these agents do the work. In Arizona and New Mexico during many months of the year the air is so abnormally dry that rust can not take place, but there is seldom a case to be met with where humidity or moisture of any kind does not contain air.

So, knowing this, the first thing to do is to see that no moist air comes in contact with any highly polished steel surface, and to prevent this a very simple remedy is used. If you keep a gun case in a dry, heated room, you can be fairly sure that the air is dry, at least during the winter. The best thing to do is to take a cake of camphor about two inches square and put it in the bottom of the gun case, and what happens is very simple. The camphor evaporates and condenses microscopically fine on the surface of the steel and prevents the access of moist air. I have done this for a number of years and have never found it necessary to look after my guns much more than once a year, excepting when I use them.

The next thing to observe is, many a time after greasing the inside of the gun barrel, rust will start to pit under the grease. This is due to the fact that all of the moisture produced by the firing of the gun has not been

entirely removed—therefore, the best procedure is to clean the inside of the barrel of the gun with a material softer than steel, and that should be a brass brush, and never a steel wire brush, and if you find a very slight impression of rust on the inside barrel of your favorite gun, do not worry and think that the gun has lost its accuracy, because rust is much more voluminous than the steel itself. Getting down to what the chemist knows as "molecular" weights, five pounds of steel will produce over twenty pounds of rust, so that when you see a slight speck of rust, only one-fourth of that can be represented in steel which frequently is infinitesimal.

There are a number of materials used which remove rust without much attrition, and principal among those are Citric Acid, which is the acid of lemons. This has a strong affinity for rust and takes it away instantly, and of course you must be careful to let hot water run through the barrel so that it will remove any traces of citric acid.

I tried an experiment quite some time ago we chemists are familiar with for the prevention of rust. First, I cleaned the barrel perfectly dry, then I put a cork in the muzzle and filled up the barrel with a 10 per cent solution of bichromate of potash; then I let hot water run through it, wiped it dry, and put it aside without oiling, and it remained bright for a year. This is the well-known chemical experiment which inhibits rust or prevents steel from rusting even though it be exposed to moist or damp air, but it is not permanent.

I have had some of my fine weapons at the seashore where the salt air is much more corrosive than inland air, and by using hot water first, after firing at the end of the day, and then wiping dry and applying a coat of any well-known neutral grease, I have never had the slightest sign of rust.

Trapping Coyotes

(Concluded from Page 11)

"In conclusion, I will say that I have spent the greater part of my life trapping predatory animals. I have been up against a good many cunning animals, but those two coyotes were the first ones that I ever thought I would have to give up as being too cunning to trap. They had me thinking so more than once. I have come to know by actual experience that many of the seemingly unlikely tales told by old hunters about the super-instinct of the coyote are really true. There is no doubt that now and then you will find a coyote that seems to possess strong reasoning powers. This, however, is the exception and not the rule."—Reprinted by permission of the *Bulletin of the American Game Protective Association.*

Just Between Ourselves

By C. A. Bramble

WE RIFLE cranks are never satisfied, but we do get a lot of fun out of our experiments and arguments. And in this connection I shall go on record as certifying that "The American Rifleman fills a long felt want. The want was, so far as I am concerned, more than usually supplied by the issue of September 15. It was beef to the hock like a Mulligar heifer.

I was particularly interested in the communication dealing with "British Big Bores" by Mr. Ellerton James. In the main I agree most cordially with him as to the qualities necessary in a big game rifle, as distinguished from a super-accurate rifle for target work, but on the other hand some of his remarks fill me with astonishment.

Why is it that so many men find it necessary to carry portable field pieces into the Canadian bush wherewith to kill moose?

Mr. James says he has been killing moose for about 25 years. I can prove that I have been shooting moose off and on for nearly forty years—in fact, ever since I was a very young man. I have shot them from Nova Scotia to the Yukon and have lived with some of the most wonderful moose hunters Canada has ever known, white, red and demi-tasse, or pale chocolate. Setting aside all arguments arising from differences of theory, let me get down, in as few words as possible, to actual facts, relating just the weapons that satisfied men who have brought up large families on moose meat, and who certainly must have known the power necessary to provide the basis of a dinner to satisfy a lot of hungry little stomachs.

The hunters whom I yet occasionally met when first taking the field in the 80's, sometimes used the long H. B. C. flintlocks, with a four-foot barrel, 28 smooth bore, carrying either shot or a round ball. With these apparently feeble weapons the old boys seemed to get all the game they required, the said game being abundant, not disgustingly wild, and they having learned how to stalk near enough for a sure shot in the right place.

But, undoubtedly, in these distant days the 44-40 Winchester had the call. It was looked upon as heap good medicine—a powerful, accurate piece—one that provided no excuse for letting anything escape.

But, in time, the Winchester Centennial began to find its way into the hands of such hunters as were thoroughly up to date, in the van of progress as it were. This terrificly powerful weapon with its 350 grains of lead, its 70 grains of powder and its M. V. of some 1340 feet was spoken of with awe on account of its tremendous smashing power and fearsome report. Many considered it unnecessarily punishing and most of the old guard stuck to the 44-40 until they cashed in for the Happy Hunting Grounds.

I used to prowl about with an arsenal consisting of a Greener double express .450 caliber, carrying an absurdly light bullet of 270 grains, driven by a charge of 110 grains Curtis and Harvey No. 6, backed up by a Winchester Centennial, and further heartened by a sporting .450 Martini single shot. This last weapon took the cake for recoil and deadly inaccuracy. But either of the others could drop anything I ever met, including bulls carrying antlers well up in the 50-inch class. Yet neither would be considered very powerful rifles today.

And so on and so on, but as I know our editors like short yarns, I will not ramble on too far nor too long, merely contenting myself with a few illustrations of my argument drawn from actual contact with me who practically lived by the rifle.

George Crawford must have been well known to many American riflemen, as twenty years ago he guided through the Temiskaming and Kipawa lakes regions of western Quebec and eastern Ontario. His choice was a 38-55 Winchester. I once asked him if he thought that quite heavy enough. With his sunny smile he looked me straight in the face and said, "Heavy enough for me."

But the champion small-bore enthusiast lives by the banks of the Winnipeg River at Fort Alexander (now, alas, ruined for the hunter because of waterpower development and pulp mills.) Four years ago, before modern "improvements" had set in, the region was full of moose and Paul got more than his fair share of them. He had tried all bores and actions being a good trapper and a young, intelligent, alert man, and had settled upon the .25-35 as the best hunting arm of the lot. His verdict was, "Best for everything from rabbits to moose."

My own favorite gun for still hunting in the Canadian forest east of the great plains is the 30-30 Winchester, with half length magazine, shotgun butt and open sights. Which will show the ultra-scientific purists what a hopeless wretch I am, and fill them with horror at my unparalleled affrontery in coming out with such a confession.

I can't help this, though. If I had to choose between lugging a .375 Holland weighing eight pounds and a 30-30 W. R. A. carbine hefting but 6¼ pounds I know which would be left behind.

The Aberdeen Test

(*Concluded from Page 2*)

off, with a figure of 7.562 inches. Lot No. 3, which had scored 5.698 inches for the first relay, scored 5.632, a difference of about six one-hundredths of an inch. In the Verticals a similar situation was apparent. Lot No. 1 improved its verticals by 4 inches, registering 17.12 inches. Lot No. 2, saw its verticals climb 8 inches over the previous figure, due without question to a single group which printed approximately 38 inches from high to low shot. Lot No. 3 saw less than 2 inches difference in this dispersion.

This circumstance, which recurred as the test progressed, led to the conviction that there was a material difference between the accuracy of one of the Mann barrels and the other two, barrel No. 2 being the worst and No. 3 the best. But inasmuch as the competing lots were being rotated through each of the barrels it was thought that this difference would be automatically adjusted; an assumption into which the problem of following cupro nickel with gilding metal through the barrels did not enter since all types used the same bullet jacket material.

The changes made by the second relay of targets caused corresponding changes in the aggregate standing of the competitors. For this stage of the shooting, Lot No. 3 (National Match) went from second into first place on an average mean radius for 10 targets of 5.665 inches; Lot No. 1 (Hercules Powder) from third into second place with 6.158 inches, while Lot No. 2 (Du Pont Powder) fell from first into third place with 6.589 inches.

Five targets more and the 1,000-yard firing was half completed. Both crew and rests seemed to steady down for greater consistency. The drizzle, which had forced the rigging of a temporary shelter over the rests, ceased from time to time and there were brief periods of better light.

With targets 11 to 15, inclusive, Lot No. 2 (Du Pont) came back into first place for the relay, with a mean radius of 4.67 inches, with Lot No. 3 (National Match) second on 5.062 inches and Lot No. 1 (Hercules) third on 5.542 inches. The best Verticals were also registered by Lot No. 2 with an average of 14.232 inches.

A calculation of the average mean radius for targets 1 to 15 disclosed the fact that the dispersion in all lots was noticeably shrinking. Lot No. 3 was in the lead with a figure of 5.464 inches; with Lot 2, second, on 5.949 inches, and Lot 3 third on 5.952 inches.

The imprinting of a single exceptionally close group with Lot No. 1 (HiVel) gave this entry a better show in the line-up of competing types for targets 16 to 20. This group, on target No. 19, gave these measurements: Extreme Vertical, 9.15 inches; Extreme Horizontal, 6.60; Group Diameter, 9.50, and Mean Radius, 3.72. The other four groups in this relay for Lot No. 1 ranged from 4.34 inches to 7.21, of an average of 6.32. The average mean radius for the five groups was 5.802. The Du Pont entry, Lot No. 2, averaged for these five targets 5.906, and National Match, 5.218, which held first place in the aggregate standing for Lot No. 3, with a mean radius for twenty targets of 5.401 inches, with HiVel second, 5.914 inches, and Du Pont third, with 5.936 inches.

With the first target of the fifth relay, HiVel not only equalled but bettered the remarkable group of target 19, sending over ten shots which gave a mean radius of 3.69 inches (Extreme Vertical, 952; Extreme Horizontal, 8.95, and Diameter, 11.50), and this with four other average good groups gave Lot No. 1 a relay mean radius of 5.106, placing it in the lead with a slight advantage over the National Match type with 5.272 and the Du Pont entry third on 5.662 inches.

In spite of this, the National Match remained at the top on figures for the 25 targets having recorded an average mean radius of 5.375 against HiVel's 5.753 and Du Pont's 5.883.

The final relay—largely by virtue of barrel No. 2, considered the poorest in the lot and used for Lot No. 3 at this particular stage of the shooting, killed the chances of the National Match type.

Groups ranging from 4.57 to 7.76 inches as against materially smaller groups for the HiVel charge, under the already close conditions, brought Lot No. 1 across the winner, with the 1923 National Match type second and the Du Pont entry third.

The average mean radii for 30 targets at 1,000 yards in each of the three lots gave The Boat-tail HiVel 5.685 inches; National Match 5.700 inches and the Boat-tail Du Pont 5.706 inches.

The shooting at 1,000 yards which raised the question in the minds of some of the Ammunition Board members as to just how much the use of a Mann barrel of suspicious quality may have had to do with the outcome of the test, has already resulted in a decision by the Ordnance Department to conduct an investigation which may effect the conditions of the International Match ammunition tryout scheduled for December 17.

This is a series of tests to determine whether it is detrimental to accuracy to shoot bullets jacketed with cupro nickel and gilding metal through the same barrel *when the barrel is thoroughly cleaned with ammonia dope* between the firings of each type of jacket. This test will be conducted simultaneously at Frankford and at Aberdeen immediately.

If the test should prove that there is no prejudice to either type of bullet jacket in this practice, the Ammunition Board may decide to conduct the International Match ammunition test, in which both gilding metal and cupro nickel will figure, by having all contestants use all barrels in rotation with plenty of opportunity to clean between relays.

Without stopping for dinner, the ammunition test drove on into the afternoon with firing at 600 yards. At this distance the struggle became as close a race as it had been at the greater distance.

The first relay—targets 1 to 5—showed the HiVel Lot maintaining its lead on a mean radius measurement of 2.048 inches against Lot No. 3, with 2.572 inches, and Du Pont's 3.29 inches. The Verticals lined up in a similar standing—Lot No. 1, 5.74 inches; Lot No. 3, 6.738, and Lot No. 2, 7.748.

The next five targets gave Lot No. 3 the best mean radius—2.338 inches, with 2.46 inches for Lot 2 and 2.546 inches for Lot. 1.

Striking an average for the 10 targets gave Lot No. 1 a mean radius of 2.297 inches; Lot 3 a mean radius of 2.455 inches, and Lot 2 a mean radius of 2.875.

Lot No. 1 clinched its claim to honors with its final five targets shooting a remarkable series with an average radius of 2.186 inches, the average vertical of which was 6.41 inches.

The groups made by Lot No. 2 of 2.28 inches and by Lot No. 3 of 2.486 inches did not disturb the supremacy of Lot No. 1. The average radii for the fifteen targets were: Lot No. 1, 2.26 inches; Lot No. 3, 2.466 inches, and Lot No. 2, 2.676 inches.

The figure of merit upon which the winner was decided was arrived at by multiplying the mean radius at 1,000 yards by 2, adding the 600-yard mean radius and dividing by 3, which was tantamount to adding all mean radii and dividing by 45, the number of tragets fired.

While the 600-yard firing was going on in the 30 caliber test, the pistol ammunition for 1924 was being tried out. As in the rifle ammunition test, three lots were submitted.

In two of these lots a new bullet known as a "hollow flat base" was submitted. This bullet is .4515 inches in diameter. The core, instead of being flush with the metal case, comes only to the inner edge of the jacket, where it is turned at the base of the bullet.

Lot No. 1 in the Pistol test carried this bullet, weighing 230 grains, and driven by 5-2 grains of Hercules Special Bulls-Eye powder of a new granulation.

Lot No. 2 also carried the new bullet but with 5.7 grains of Du Pont Pistol Powder No. 5.

Lot No. 3 was the same character as the 1923 Pistol ammunition.

The figure of merit was arrived at by striking a mean of the Extreme Verticals and Extreme Horizontals.

This system gave Lot No. 2, loaded with the new bullet and Du Pont powder, a figure of merit of 2.959 inches at 50 yards; Lot No. 1—Hercules Powder—3.245 inches, and Lot No. 3, 4.073 inches.

None of the lots of pistol ammunition showed any recurrence of the trouble which brought about the numerous hang fires at Camp Perry. But since the testing was done in the "pistol gun" which delivers a firing pin blow different from the automatic, hangfires in any event were not to be anticipated.

By and large the Aberdeen tests will supply ammunition makers with considerable new data, both in the matter of practical bullet design and accuracy standards. One of the significant phases of the performance of the 9-degree boat-tail is that it is not alone an accurate match bullet but one which seems to be well fitted for military purposes.

THE NRA NEWS

Conducted By C. B. Lister

IN ORDER that those interested in the Free Rifle and the Olympic Matches of 1924 may be kept fully informed of these matches, it is intended to furnish all information concerning them from time to time as it becomes available.

The following outline gives all the data on hand at present, and it must be borne in mind that it is subject to change, and in some points not entirely clear.

The Free Rifle Matches under the auspices of the Union Internationale de Tir will be fired at Rheims, France, June 8th to 21st. This is the Argentine Cup Match won by the United States for the last three years. Teams of five shooting members and two alternates. Range, 300 metres. Positions, standing, kneeling and prone. Shots, 40 in each position.

The Olympic Matches

It is not quite clear in the heavy caliber matches whether or not the rifle to be used must be the Army Rifle or whether the Free Rifle is allowed; it would appear that the Army Rifle was to be the arm.

The rules are quoted verbatim:

General Regulations

Any contestant may be excluded from one of the events on account of his lack of knowledge of the rules herewith or for transgressing same or for lateness to the event.

In the competitions by teams the substitutes will not be allowed to replace men of the team once on event is started.

Each team shall have a captain who alone will have the right to speak for his men. It would be advisable that the captain of the team be chosen from among those who do not take part in the event.

Definition of Positions

Standing: On both feet without support.

Kneeling: On either knee. A cushion will be allowed under the foreleg on condition that the toe and the knee touch the ground.

Sitting: Square on buttock, elbows resting on the knees, legs crossed or not.

Prone: The contestant may lie down facing the target or sidewalls, on the ground, on a carpet or on a waterproof cloth on condition that the body be supported on the elbows only, the forearms not being supported in any way.

Sling: No slings or straps of any kind shall be fastened to the gun during the event.

SPECIAL RULES

Shooting with Army rifle

Any Army Rifle allowed, without telescopic sights. Contestant is allowed to wear non-telescopic glasses.

Any sort of ammunition may be used except that it shall not be of a specially dangerous nature. In case of accident caused by defective ammunition, the contestant to whom said ammunition belongs shall be held responsible.

The value of each shot will be determined by the edge of the shot hole.

A. Competition by Teams

Arms at will; without lenses or telescopic sights.

Any position without supports.

5 contestants per Nation and 2 substitutes.

Distances: 400, 600 and 800 meters.

10 shots with 3 trial shots at each range.

Maximum time 2 hours for the whole team at each range.

White targets, diameter 2 meters 50 with black bulls-eye of 90 centimeters diameter divided in three equal zones counting 5, 4, and 3. A white zone around the bulls-eye shall count for 2, the rest of the target counting for 1.

Classification according to the largest number of points: scores will be indicated at each range from the pit.

In case of tie: Barrage as in International Matches.

2. If tie persists: New match of ten rounds between the teams tied at the 600 meter range.

B. Individual Contests

(a) Arms at will (with or without telescopic sights). Position, target, classification, barrage, the same as for team matches.

Maximum number of entrants: 4 per Nation.

1 series of 20 shots in succession, 3 trial shots.

Maximum time for the series: 45 minutes.

Distance, 600 meters.

(b) Shooting gallery: Carbine caliber 22 without telescopic sights or lenses.

Distance: 50 meters.

Position: Standing.

Maximum number of entrants: 4 per Nation.

4 series of 10 shots with trial shots per series.

Maximum time for each series: ¼ hour.

Regular targets same as pistol shooting match, same classification and same barrage as fore mentioned matches.

The target for .22 caliber is a ring target containing ten equally spaced rings valued from one to ten; outside diameter 50 cm. counts from seven to ten in the black; diameter of the black 20 cm.

The Olympic Matches are to be held at Chalons, about forty kilometers from Rheims, from June 21st to 28th.

The small-bore will be held at Rheims on June 21st and 22d.

The composition of the American team will depend on the character of arms used. If the Olympic Matches are shot with the military rifle, there will be two complete teams; one of seven men for the military rifle and one of seven men for the free rifle. If the Free Rifle can be used for both events, the rifle squad will be somewhat reduced, the best five men shooting in both events. Individual matches will be shot by the individual members of the teams. Small-bore may be a separate entry, dependent on arm used, or may be included in the Free Rifle. The small-bore being a standing individual event, it will probably be shot with a .22 caliber Free Rifle. As this shooting is the same as the .30 caliber Free Rifle, the same men will be permitted to shoot both, provided they are good enough. The best four small-bore men will be taken regardless of whether or not they are members of the Free Rifle Team. In the event of two types of shooting, the Military and the Free Rifle, each team will fire its own events and train only with its own arm.

From the 1923 International Matches, eighteen men were designated as a basic squad for the 1924 Free Rifle Team tryouts, and are authorized to appear at the final tryouts without participation in any of the preliminaries.

Preliminary regional tryouts will be held in various parts of the country at times and places to be announced later. Any one making a score to warrant it will be sent on to the final tryouts to be held at Quantico, Virginia. All teams will be selected from these final tryouts and put in training for a week or ten days prior to sailing. Sergeant Fisher, being Olympic Champion of the world, and the 1923 Free Rifle Champion of the world will be taken to defend these titles without being required to fire in the tryouts.

As it is desired to arrive at Rheims a few days before the match, the following approximate times can be set for the various tryouts and sailing:

Preliminary tryouts about first week in April.

Commencement of final tryouts first week in May.

Completion of final tryouts about May 10th.

Sail from United States about May 20th.

Arrive in France first week in June.

As the selection of both International and Olympic Teams will be under the National Rifle Association (in the case of the Olympic Team the Olympic Committee must pass on the eligibility of all contestants), the tryouts will be under the direction of that organization.

The National Rifle Association at 1108 Woodward Building, Washington, D. C., will be glad to furnish additional information to any one desiring it through the columns of its official publication "The American Rifleman."

THERE is a mighty good principle underlying the following extract from the Hillsboro (Texas) Evening Mirror:

SMALL ARMS FIRING SCHOOL OF INSTRUCTION

To Be Conducted By Lieutenants Carrico and Cox During Winter Months.

It is contemplated by Lieutenants I. B. Carrico and G. E. Cox to hold, in connection with the drills of Company L, a school of instruction in small-arms firing, with particular attention to the Service Rifle, during the winter months of 1923-24.

Both of these officers hold special certificates of proficiency in the use and instruction of the rifle from the National School at Camp Perry, Ohio.

From eight to fifteen periods of instruction will be given without cost to members of the military organizations or the Hillsboro Rifle Club. To insure attendance at each of the instruction periods each student will be required to deposit $5.00 with the treasurer of the Hillsboro Rifle Club and when the course is finished the money will be refunded. In case a student does not attend a class 50c will be assessed to pay the instructor for going over the particular lesson again.

It is intended to hold the classes during the regular drills of Company L, on Thursday nights as this is a form of military instruction for which the members may be excused from other duties.

Following the completion of the instruction course the members of the class will be taken to the outdoor range for as many periods as they can arrange to attend.

No person is wanted in the class who does not honestly want to learn to shoot and a lack of interest and attention to instructions will be taken as a sign that the student does not want to continue and he will be dropped from the class that the time may be given to someone who will appreciate it.

All prospective students are warned that it takes either lots of very hard work or a natural ability to learn to shoot well and none are wanted in the class who are not willing to work. The main object of this class is to put more men from Hillsboro on the State Rifle Team next year and in after years and as both of the instructors have been there and realize what the National Matches at Camp Perry mean it can be depended upon that they will do their part.

The publication, "Rifle Markmanship," states that "With intelligent and thorough instruction any man who can pass the examination for service in the United States Army can be made, in one target season, to qualify as marksmen or better." Do you want to be one of them?

All civilians who complete the record course and qualify in record practice will be issued the appropriate badges.

Anyone desiring to attend this class please see one of the above officers at once.

It is a fact amply demonstrated that mankind appreciates but little that which it gets for nothing. The plan evolved by Lieutenants Carrico and Cox requiring a deposit at the beginning of the course of instruction will assure them of an interested and full class. Note, too, that the fifty cents which is deducted for each absence from the class is to pay for the time of the instructor in *repeating* the lesson. In other words, the absent one does not lose the instruction and the fifty cents, too. Is it too much to expect that he will pay more attention to the fifty cent lesson than to the others? Every man who has been to Perry, civilian or Guardsman, can find much to think about in the Hillsboro scheme.

* * *

Stimulation of interest in clubs' activities during the winter months hinges altogether on the program of practice events and matches which is developed and followed. An attractive medal or little trophy of some description to be fired for once a month, or be awarded once a month on the basis of scores made in the four weeks of practice and record firing, will go a long way toward establishing the club as one of the necessary community recreation centers.

* * *

It has been recommended to the Adjutant General that Special Regulation No. 106, governing the issue of supplies to civilian clubs, be changed to provide for the issue of 240 ball cartridges, caliber .30 for model 1903 or 1917 for each member instead of 120 ball cartridges, as now provided for. It has also been suggested that paragraph No. 17, requiring each club to submit as of December 31, an annual report to the Director of Civilian Marksmanship showing the name of each member firing and the score made at each range be eliminated, as the qualification reports submitted annually provide all the information that is required for the records of the Director of Civilian Marksmanship. These two changes are of material interest to club members and club secretaries, as the present allowance of ammunition is inadequate to allow members to fire practice and record courses, while the reduction in paper work resultant from the proposed change in paragraph No. 17 will please all club secretaries who already have their hands full getting members out to the range. It should be noted that these changes are suggestions to the Adjutant General and have not yet been approved.

* * *

Speaking of life membership, wouldn't that make a fine Christmas present for that boy of yours or for the hard-working individual who is particularly responsible for holding your rifle club together? The life members of the N. R. A., you know, are the ones who vote and are the men who are elected to the Directors' Chairs.

* * *

The Board of Park Commissioners of Minneapolis, Minnesota, have started something for which they deserve the thanks of every rifleman. They have authorized the organization of a girls' rifle club in the Recreation Department of the Board, with the result that there are forty-five girls, sixteen years of age or older, who are shooting weekly in one of the city armories. It is of course an assured fact that the girls shooting, the men interested in community recreational activities will not be far behind. Many rifle clubs at present laboring under inadequate range facilities would be able to provide themselves with a comfortable range and club-house if they could persuade their Park Commissioners of the wisdom of the Minneapolis plan.

* * *

Applications received for affiliation or re-affiliation are now being applied against the calendar year 1924. The annual meeting of the Board of Directors of the N. R. A. will be held the first week in February and it will prove a decided stimulus to these men who hold the guiding reins of the Association's activities if they can be told at that time that every 1923 annual member has reaffiliated for 1924 either as an annual or life member.

* * *

There was a time in the ken of the still alive oldest inhabitant when Thanksgiving meant first, the turkey shoot, then apple-jack, and finally, roast turkey and the fixins, and while rifle shooting is nowadays such a "dangerous" sport as to be unsafe for those Americans who prefer to sit in the bleachers Thanksgiving and watch twenty-two able bodied huskies maltreat one another, strange to say, in those youthful days of the oldest inhabitant, even mixing the apple-jack and rifles, they failed to materialize any of the killings, back-breakings, or minor strains and bruises which invariably mark the celebration of our more modern and "safer" Thanksgivings. It may detract somewhat from the drawing powers of a turkey shoot not to have the apple-jack. I said it may detract, but I don't think it will, and it certainly will not detract from the mental kick that comes of a November morning, the crack of a rifle, and the bobbing of a turkey target, natural or artificial.

There is a gentleman by the name of Finn, initials "C. C.," who holds forth in the great Northwest, state of Washington to be exact, who learned a great deal about turkey shoots last year. But his experience was so well broadcast through the columns of this paper that club secretaries who venture turkey shoots this year need not make the mistakes that Finn did. Thanksgiving is one of the few big days when the American public is in a holiday mood, has the day off to enjoy itself, and is looking for outdoor sport of one sort or another. The possibilities for romancing a bit in advertising a turkey shoot are not equalled by any other sport or at any other time of the year, and the opportunity for catching the sporting editor in a good frame of mind will never be any better.

We have no definite program to offer. Far be it from us to get anyone in Finn's fix, but local conditions, local likes and dislikes for various styles of shooting will suggest an appropriate program to every live secretary. The club ought to be able to afford the cider, and the shooters should more than pay for the turkeys. Club members' wives are generally willing to throw in the mince pies, etc., so that the prize list will be amply salubrious and inexpensive. At the opening gun in your 1924 campaign, put over a turkey shoot. Out or doors if possible, but indoors if necessary. Talk it up by letter, newspaper, and placard, and take plenty of new membership cards to the range with you.

* * *

Good photographs suitable for reproduction in various advertising pamphlets and handbooks are urgently needed, showing attractive club-rooms, galleries, outdoor small-bore or military rifle club ranges, etc. This is an opportunity to boost the game and obtain some publicity for your club, as due credit will be given for all photograph. useds. But hurry them up!

* * *

There was an error in the caption of the "Two-Man Team" photograph in the issue of November 1. The personnel of this team was E. E. Henderson of Los Angeles and F. I. King of Pasadena, California. R. H. Betts and H. G. Olson of Pennsylvania were co-winners of second honors.

Conducted By Col. C. E. Stodler

THE duties of the rifle club officer—especially if he is seriously concerned with the healthy growth of his organization are apt to be difficult—notably when, as is often the case, a shooter undertakes this work for the first time. In most matters relating to the business of the club with the War Department, there is a certain routine to be followed; simple if it is understood, but apt to be difficult if the channels are not clearly comprehended. Therefore one of the principal purposes of these columns is to give rifle club officials all of the information possible, not only on questions of the issue and purchase of government supplies but on the conduct of club affairs in general.

Rifle clubs affiliated with the National Rifle Association are issued rifles, ammunition, targets and other material to assist them in training their members to use the Service rifle.

It is very desirable that new clubs and new members be correctly instructed before starting range practice. Incorrect instruction or no instruction at all frequently results in failure to acquire proficiency and the shooter gives up the sport thinking that he can never learn to shoot.

The War Department cannot furnish instructors to all rifle clubs. Those clubs located near an Army post with a range can usually secure the services of a qualified instructor and can hold their practice on the Army range. Those not so fortunately situated must find other means of providing the necessary instruction. Every club should have at least one copy of "Rifle Marksmanship." This is the manual of instruction in rifle shooting prescribed for the Regular Army and the National Guard, and the methods described in this publication can be learned and applied by any one who is willing to devote a little time to study and practice. These methods have been in use for several years and have given excellent results. The part devoted to individual instruction has recently been published in "The American Rifleman."

One of the greatest errors made by the new rifleman is to attempt to learn to shoot by firing a service rifle on the range without first learning the fundamental principles of rifle shooting. Considerable time should be spent in learning the correct position, how to aim correctly, to squeeze the trigger properly and to move the sights so as to bring the center of impact to the center of the bulls-eye. If the new rifleman attempts to learn all of these at the same time he becomes confused and acquires habits which must be corrected before he can become a good shot.

Having acquired reasonable proficiency in the preparatory exercise prescribed in rifle marksmanship, the first firing should preferably be done with the .22 caliber rifle in the gallery or at short range outdoors. This shooting with the .22 caliber rifle is very important, as it serves to check up on the positions, uniformity of aim and trigger squeeze and to impress on the rifleman the necessity for the utmost accuracy and uniformity in applying the principles previously learned. Changes in position, lack of uniformity in aiming and variations in the trigger squeeze are all shown in the size of the group on the target. The first practice should be in the prone position, but much practice should be done in the other positions. Frequent matches should be held in the standing, kneeling and sitting positions.

The new rifleman should take advantage of every opportunity to shoot in matches and should enter as many of the N. R. A. matches as he can. Many riflemen are excellent shots on their home ranges but do not shoot well in competition with other riflemen on other ranges. Frequent shooting in competitions will do much to improve the new man's scores and to give him confidence in his ability.

There is no more Krag ammunition on hand at San Antonio Arsenal, Texas. The only places at which this ammunition is now available are Schenectady, N. Y., Charleston, S. C., and Augusta, Ga.

None of the 1923 National Match rifle and pistol ammunition is available for sale. There is a supply of 1922 National Match rifle ammunition for sale at $2.78 per bandolier of 60 rounds or $55.61 per case of 1200 rounds. All of this ammunition is at Frankford Arsenal, Philadelphia, Pa.

The entire supply of British short Lee Enfield rifles, cal. .303 has been sold.

Purchasers of rifles frequently ask for rifles with certain specified bore and groove diameter, as for example bore diameter .300, groove diameter .308. These requests usually cannot be complied with. It is impracticable to bore and rifle all barrels exactly alike, but the variations allowed in the star gauged and specially selected rifles do not exceed four ten-thousandths of an inch.

Purchasers also frequently request rifles with special chambers or with certain head space tolerances. These rifles are all chambered as nearly alike as possible and special selections of this kind cannot be made. Variations in outside dimensions of barrels or in stock dimensions cannot be furnished except at a cost considerably in excess of that charged by commercial firms.

No more Winchester single shot rifles, cal. .22 are available for issue to rifle clubs. It is necessary therefore to suspend the issue of .22 caliber rifles until a new supply can be procured.

The price of pistol ball cartridges, cal. .45, model 1911, has been increased by the Ordnance Department to $30.92 per thousand or $61.84 per case.

There is a small supply of revolver holsters cal. .38 for the Army model Colt revolvers with 6-inch barrel. They are of the pattern formerly used in the Army and made to carry the revolver on the right side with the butt to the front.

The price with thong is . . . . 70c.
Without thong . . . . . 60c.

During the past two months many correspondents have made inquiries relative to soft point ammunition for the 7.62 mm. Russian rifle. It has now been learned that the United States Cartridge Company is placing on the market a cartridge of this caliber loaded with their 145-grain hollow copper tube bullet. The muzzle velocity is 2900 f. s., muzzle energy 2710 ft. lbs. Two hundred yard trajectory—height at 100 yards 2.42 inches.

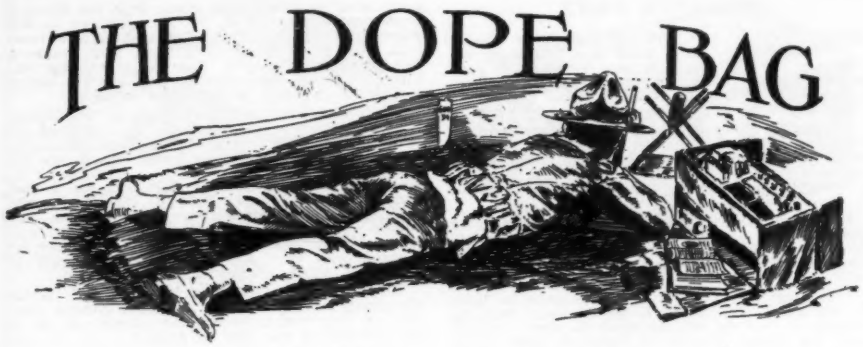
Rifle Craft

MILITARY and small-bore target shots will be interested in a new 125-page book called "Rifle Craft," which has been written by C. S. Landis. It is bound in cloth, and published by the Sportsman's Digest Publishing Company, of Cincinnati, Ohio. The book contains thirty-three photographic illustrations, and sells for $1.00. This new publication, as might be expected, contains more information on small-bore rifle shooting than any other previous publication. It also contains chapters or paragraphs on both large and small game hunting, military target shooting, ammunition tryouts; the use of the telescope sight on the range for big game and small game hunting and for sniping.

The effect of leading on accuracy, result of cutting off the muzzle and rechambering, and accuracy of barrels from which rust has been scoured, the action of previously misfired cartridges, the accuracy of oily and greasy barrels, as well as restocking, stock finishing, sighting, ammunition reloading, and barrel cleaning are discussed.

Tables of elevation for .30 Springfield and .22 long-rifle ammunition, trajectories of popular sporting and military cartridges, appearance of peep and telescopic sights in game shooting and all long-run records to date are given.

Rifle Craft is unique in that it contains no factory cuts, and practically no catalog information, and that it covers subjects that are largely different than those discussed in other publications.



A free service to target, big game and field shots, all question being answered directly by mail.

Rifles and big game hunting: Maj. Townsend Whelen.
Pistols and Revolvers: Maj. J. S. Hatcher.
Shotgun and Field Shooting: Capt. Charles Askins.

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

British Columbia Game Fields

By Townsend Whelen

FOR THE hunter who is seeking British Columbia big game, the Caribou District is an excellent hunting ground for all heads except sheep.

British Columbia Hunting has been called up for discussion in The Dope Bag by a Kansas City hunter who says that he is going into this territory during the 1924 hunting season, and that he is at present in communication with Thompson Brothers, guides, of Barkerville.

I have kept tab on the game conditions in the Caribou District, for which Barkerville is the supply and entrance point, for over 20 years.

Barkerville is reached by auto stage from Ashcroft on the Canadian Pacific Railway, the distance being about 300 miles.

Barkerville used to be the center of the gold mining district in Caribou, but I believe minnig has almost ceased there. The mountains to the northeast and east of Barkerville contain a lot of game, and I think the district is an excellent one for a hunting trip. The country is interesting and the climate good until about November 10. The district is excellent for moose and caribou, and very good for goat and bear. There are no sheep.

Personally I do not know anything about Thompson Brothers except that I have noticed their advertisements in sporting magazines for the past three years. The oldest guide in that region is a man named Kibbie, who has lately taken into partnership a Mr. Reed. Kibbie and Reed's address is also Barkerville.

In this region most of the sporting parties used to go into a country northeast of Barkerville about 50 miles. Here a chain of large lakes, including Isaac and Spectacle Lakes, etxended in almost a complete circle around a large range of mountains and assisted greatly in solving the transportation problem as canoes were used on these lakes. This region has lately been placed in a game reserve, but I imagine that there are lots of other good game country. E. S. Knight of Ashcroft, B. C., is also taking parties into this region. I understand his parties go into the country northeast of Quesnel Lake, reaching this region by the northeast arm of this lake. A hunter named Manson, whom I met in the mountains across the Fraser River, west of Barkerville, in 1906, told me that several years before he had been in the Quesnel Lake country several years before, and that it was a splendid hunting country. I believe there has been very little hunting in this country until last year when several parties went in there. Summing it all up, I should say that the country around Barkerville is perhaps the easiest reached of all the really good big game regions of British Columbia, and that if your time is limited it offers you the best chance except that there are no sheep.

The other really good big game districts in British Columbia are more difficult to reach, and at least two months is necessary for a successful trip. By far the best country is the Cassier District reached by steamer to Wrangel, Alaska, and then a power boat up the Stikine River about August 20 to Telegraph Creek, B. C. The outfitter here is Frank Calbreth. You can reach him easiest by telegraph as Telegraph Creek is shut off from mail communication from now until Spring. It is a 40 or 50 day trip from Telegraph Creek. Excellent Indian guides and excellent pack outfits are employed, and the whole thing has been very well systematized. I think the charges for a 40 day trip are about $1,800.00 for one sportsman, or $3,000.00 for two, everything included except licenses and personal outfit. Excellent specimens of moose, caribou, goat, bear, and sheep (Stonei) are assured, and the trip is perhaps the best big game hunt in America.

Another exceedingly interesting trip is to start from Prince George on the Canadian National Railway with canoe and outboard motor and go down the Crooked, Pack, and Parsnip Rivers to Findlay Forks on the Peace River. On this part of the journey you pass through an excellent moose and trout country. From Findlay Forks one can ascend the Findlay River about 150 miles and back pack into the mountains to the East where moose, caribou, sheep, and bear will be found. Or he can continue down the Peace River, get a pack train at Hudson's Hope, and go into the mountains either to the north or south and get moose, caribou, sheep, goat, and bear. All these species are assured although there is some doubt about sheep to the south. The sportsmen would then come out by way of the town of Peace River which is connected with Edmonton, Alberta, by rail. This is the most interesting trip in the northwest. The scenery is magnificent, and one sees a whole lot of country. The trip can be arranged through J. Renshaw of McBride, B. C., on the Canadjan National Railway. Several of my firends have taken this trip, simply dropping off the train at Prince George and packing up a man and canoe there. The country is so big, and has been hunted so little that it is practically virgin. See "At the Headwaters of Peace River," by Paul J. Haworth, published by Scribners.

The above in brief describes the best big game regions in B. C. Much information, pamphlets, etc., may be obtained from the Provincial Game Warden, Vancouver, B. C., who can also tell you where to obtain the best maps. You should have these maps as soon as possible. Mr. A. Bryan Williams, 1170 Georgia Street, W., Vancouver, B. C., knows more about the game conditions in British Columbia than any man living and can give you a lot of information. If there is anything further that I can help you with let me know. Probably as your plans advance you will have a lot more questions as to details. Personally, if time is limited, and if sheep are not essential, I think you would be quite safe in closing arrangements with Thompson Brothers.

HANDGUNS FOR SELF DEFENSE

WILL you be kind enough to prescribe for me weapons for purposes of self defense. While these revolvers or pistols may at times be used for other purposes, I desire to choose them with the absolutely sole object of all-around speed and efficiency in cases of self defense. I suppose this means the best compromise of stopping power, speed and certainty of operation. As the proper gun no doubt may depend somewhat upon the physique of the man who will use it, I might say that as ordinarily dressed I weigh about 143 pounds, and am 5 feet 10 inches in my shoes. And I will add that I am a very quiet, peace-loving, law-abiding citizen. I strongly believe in law and order; and that right should make might. I was the first in this section to enlist after our country entered the war, though I was in such poor health that I was eventually discharged. I trust I will never have to use a weapon in self defense; but should I ever be attacked by a criminal, I should like to be able quickly to settle the matter.

I should like you to prescribe two guns; one which can be concealed about the person in whatever you consider the best way,—coat pocket, lining of trousers, under-arm holster, etc.; the other to be a regular holster gun slung from the belt. This would make, for me, quite an expensive outfit. Will you therefore kindly prescribe a third gun which will, as far as possible combine the above two functions. For this latter I have in mind the .38 S. & W. Special, solid frame, round butt, with 4½" or 5" barrel,—though you may know of something much better.

I like revolvers, on general principles, much better than automatics. And if you prefer automatics, will you also name a revolver as a "running mate" for the automatic you prescribe in each case; and state your opinion of the comparative merits of the two for defensive purposes.

Will you, finally, be good enough to give me any information you can regarding the use of these weapons in case of sudden attack; and any literature on the subject, so that I can practise in spare moments with the empty gun.

Thanking you for any assistance you may be kind enough to give me.

(Answer by Maj. Hatcher.)

I think that the very best pocket weapon for self defense purposes is the S. & W. Military and Police, square butt, with 4 inch barrel. This gun is small enough to carry in the pocket, and is nearly as accurate as any revolver made, in spite of the barrel length of only four inches. Wonderful scores have been made at 50 yards on the Standard American Target with this gun at rapid fire. Chambered for the wonderfully accurate .38 Special, it has punch enough to make any man very sick as soon as he is hit. Personally, I prefer the square butt, as it seems less likely to slip when being used in a hurry, but if you prefer the round butt, by all means get the shape that suits your hand best.

As a belt gun, I would recommend the .38 Colt Army Special or the .38 S. & W. Military and Police, in 6 inch barrel.

Personally, I should prefer the 4 inch barrel, as it will do about everything that the longer gun will, and will go in the pocket, which the longer gun will not.

An advantage about the .38 Special is that you can purchase from the D. C. M. some .38 Long Colt Cartridges and use them for cheap practice with your gun.

About how to use your gun for self-defense, I regret to say that there is no literature that I know of on the subject. All I can say is that the best way to carry a gun is with the shoulder holster. You should have plenty of practice drawing and cocking it quickly with one motion. Practice rapid fire, but do not attempt to use the double action, as it will ruin your aim, and is very little quicker.

I much prefer this revolver to any automatic. About the only advantage of the automatic is that it is flatter and more compact in the pocket, but automatics are dangerous and not as reliable under all conditions as revolvers.

SOFT NOSED BULLETS IN THE .44-40

RECENT comments in the magazines about revolvers bullets stripping their jackets and splitting the barrel, have made some of us a little nervous. We have never had any such experience ourselves, but want to avoid it.

I have a Colt's Single Action Army 44-40. Would you consider it wise to shoot metal case soft nose bullets in this gun? Or would you deem it better to use full metal case bullets or all lead bullets?

In general, what is your preference for target use: full metal case or all lead bullets? What is used in the National Matches? I do not refer to cartridges for Automatics.

In purchasing a Colt's New Service Revolver what would be your preference: 38-40; 44-40; 44 S. & W. Spl; or 45 Colt? In answering do not consider recoil as a disadvantage. Which of the above is the most accurate?

In the above I am referring to factory loads only. I very much appreciate your conducting the "Dope Bag" department. With many thanks,

Yours very truly,

A. F. C., Nanticoke, Pa.

(Answer by Maj. Hatcher.)

There is no danger in shooting soft-point metal cased bullets in your .44-40. I have never heard of any trouble from this cause in this gun. I have seen trouble in the .38 Spl. and .32-20 with soft point bullets, but the trouble was due to the bullets sticking in the barrel, probably because the weapons, being designed for lead bullets, were bored too tight for good results with metal case. The .44-40, on the other hand, is made especially to handle low-power rifle ammunition, and is bored to the proper dimensions to work properly with metal cased bullets, either full cased or soft point.

Lead bullets are preferable for target use in revolvers and single shot pistols. The National matches are shot with the automatic pictol, which uses a full patch bullet to prevent trouble from having the bullets battered up in feeding through the automatic magazine and action. The N. R. A. matches at Camp Perry are practically all shot with lead bullets, except when automatics are used.

Of the four cartridges you mention, the .44 S. & W. Spl. and the .45 Colt are about equal in power and accuracy, and are about equally desirable. However, I should prefer the .45 Colt calibre, as it is slightly more powerful, and the ammunition is more likely to be found in out of the way parts of the world. These cartridges are more accurate than the .38-40 or the .44-40.

RELOADING FOR THE S. A. COLT

I am thinking of getting a reloading outfit for .45 calibre Colt single action. Can jacket bullets be usde in this model Colt or must cast bullets be used?

Can money be saved by reloading for this gun? Also, what is the best powder to use and amount of same?

E. J. T., Los Angeles.

(Answer by Maj. Hatcher.)

Cast bulelts should be used for reloading the .45 Colt cartridge. The Modern Bond Company, of Wilmington, Del., makes a mould, No. A-454690, which casts a bullet weighing 243 grains, suitable for use in your gun. The bullets should be made of a mixture of one part tin to twenty parts of lead. The proper powder charge is seven and two-tenths (7.2) grains Du Pont Pistol Powder No. 5, or five and two-tenths grains (5.2 gr.) Bullseye. The powder charges should be weighed, or measured with an accurate powder measuring machine, such as that made by the Bond people, and in case a measure is used, a frequent check should be made by weighing selected charges.

A great deal of money can be saved by reloading if you are going to do any amount of shooting. Write to the Modern Bond Company for catalog and handbook, which will be sent on receipt by them of 10c in stamps to pay for postage and packing.

THE .38-40 AND THE .45

HOW does the .38-40 cartridge and .45 colt cartridge compare as to accuracy, range and killing power, when loaded especially for a revolver with full loads?

What kind of powder and bullet is best adapted to the .38-40 when used in a revolver?

How much powder can be used with safety, and how hard a bullet is necessary with same.

Which will stand the heavier powder charge, the Colt S. A. revolver or the S. & W. Military?

Would the Colt with longer barrel give higher velocity and more accuracy?

V. S. T., Readsboro, Vt.

(Answer by Maj. Hatcher.)

The following table gives the comparison in ballistics, etc., between the .38-40 and the .45 Colt when specially hand loaded for the revolver with full loads:

Calibre, .38-40; bullet weight, 180 gr.; charge of Du Pont Pistol Powder No. 5, nine and one-tenth (9.1) gr.; muzzle velocity, 1000f-s; muzzle energy, 400 ft.-lb.

Calibre, .45 Colt; bullet weight, 250 gr.; charge of Du Pont Pistol Powder No. 5, seven and two-tenths (7.2) gr.; muzzle velocity, 781f-s; muzzle energy, 388 ft.-lb.

The accuracy range and killing power of the .38-40 when loaded as shown above is slightly the greater of the two.

The proper bullet to use is a cast bullet of 180 grains having a diameter of .400 inch, and made of a mixture of one part tin to twenty parts lead. The Modern Bond Co., of Wilmington, Del., make a mould, No. A-400623, for this bullet. The full charge of Du Pont Pistol Powder No. 5 is nine and one-tenth grains (9.1 gr.) and should never be exceeded. Either the Colt or the S. & W. will stand this charge.

The Colt with longer barrel gives slightly higher velocity, but in my opinion no greater accuracy. I do not consider the longer barrel worth the trouble of the inconvenience in handling that it causes. A 5½ or 6 inch barrel is about right.

REVOLVER GRIPS

SHOULD like to have your opinion of the Reising .32 Automatic. I have heard that it has an exceedingly sweet trigger pull, and is second to none in accuracy and finish. I have never had an automatic and cannot quite decide between it and the .22-32 S. & W.

Do you find the .44 S. & W. Military revolver unpleasant to shoot? I have heard it said that the small "saw handles" made the recoil rather severe on one's hand, as they do not soften the recoil as a larger handle or the ball like grip of the old Colt S. A. Army.

Is there anp appreciable difference in the stopping power of the .45 and the round nose .44 Special? Also are the 255 gr. Peters Auto-Rim cartdiges for the model 1917 revolver as powerful as the old Colt .45?

I find that the Colt New Service is much too large for my hand. The handle is too far away from the trigger, so that my trigger finger is almost parallel with the trigger instead of being at right angles to it. It must take a man with an exceedingly large hand to shoot this gun with any comfort or any degree of accuracy.

Are the .44 Special and .45 Colt cartridges easily obtained in Canada, and do you think I would have any trouble in getting the ePters 255 gr. Auto-Rim cartridges there?

I notice that Major Whelen is boosting the Stazon products, but I have a letter from the Smith & Wesson people informing me that they consider the B. S. A. safety paste superior to anything on the market. I should like to have your opinion of ti.

I have at present a S. & W. .45 model, 1917 revolver, but am considering selling it, and do not know whether to buy a .44 Special or a .45 Colt S. A. I think the S. & W. product is far superior to the Colt, but have heard a great deal in favor of the old S. A.

Is this gun easily cleaned as I should think it is not so easy to get at, as a swing out cylinder revolver?

Any advice will be very much appreciated by yours truly,

ALEC. W. GORDON.

P. S. Which will balance the better in the S. A. model, the 4¾ inch or the 5½ inch barrel?

(Answer by Maj. Hatcher.)

The Reising Automatic is a first class weapon, and the one I have is very accurate. To anyone wanting a .22 automatic I would not hesitate to recommend it, though of course the .22-32 is the thing to get if you prefer the revolver to the automatic.

The .44 S. & W. and also the .45 S. & W. cut my hand as you describe, even when I do a lot of shooting and have my hand hardened. The Colt large calibre guns, such as the New Service are much better shaped at this point.

The square nosed bullet of the .45 has a slight advantage in stopping power, though it isn't enough to worry about, as the .44 will make anyone it hits pretty sick.

It is true that the .45 New Service has a rather large grip that is rather hard to handle. It is just right for me. If the New Service is too large for your hand, why not use the .38 Special? Unless, of course, you want extreme stopping power.

The .44 Spl. and .45 Colt cartridge are easily obtained in Canada, but you might have trouble getting the Auto-Rim. The Auto-Rim is not as accurate as the .44 Spl. or the .45 Colt, and on account of being jacketed, it has not the stopping power.

I have never used the Stazon Products, but I imagine that they are good. Safetipaste is first class. I use it myself.

The S. A. is a little harder to clean than a swing-out, but it can be cleaned through the loading gate, and teh cylinder may be removed in a few seconds with the aid of a screw-driver. The Single action has a fine grip, especially if your hand is a little small I prefer the 5½ inch length.

Very truly yours,

JULIAN HATCHER,
Major Ord. Dept.

KOOTENEY HUNTING

I AM a Norwegian by birth but an American by faith, so mountainous countries are not entirely alien to me. As a boy I traveled mountains above timber line for years, up there where the streams are born and where snow and ice stay forever; but that was 18 years ago. I am now 38 years old, weigh 150 pounds. Well physically but "soft" owing to the nature of my work.

I studied medicine in this country, worked my way through school and have practiced for eight years, hence have not a fortune in money, but in love with the big outdoors.

Frankly, I cannot just now afford to spend $1500 or $2,000 on a big game hunt, so I communicated, on your suggestion, with the General Passenger Agent of C. N. Ry. relative to big game hunting in Ontario. I had letters from him, also from W. E. S. Bishop, and Dodds & Son of Smith, Ontario. Last named being outfitters; but all that country can offer is moose and deed and that is not quite enough.

I wrote to Cameron and Dormon, Ft. Steele, B. C., and they promised me fine hunting on White River and Sheep Creek, both tributaries to Kooteney River—E Kooteney. They say the game is there and that they can take me to it; also, that 30 days will be sufficient for a successful hunt. Charges $15 per day for guide, cook, cooking utensils, tents, pack horses, and saddle horses; hunter furnishing food. And that is better than $25 per day and 50 days for a successful hunt as you suggested would be necessary north of Jasper Park, Alberta.

Now, knowing that you have hunted in the Kooteney region, I would like your candid opinion on the region mentioned above. Is it as represented to me, full of game?

I also would highly appreciate your suggestions on personal equipment—clothing, guns, ammunition, et., suitable for that region and game. I would want to be as comfortable as conditions of that country would permit. I know your suggestions will be based on personal experience in that game, and, hence, I value it highly and shall be guided entirely by it.

I might mention a few of the things I have: 1 Krag, 1 Springfield, both modified into sporting arms by S. Griffin, high top bass boots, Army breetches, sweater and shirt, buckskin suit, field glass, etc.

A. K. Reynolds, Illinois.

Answer (by Maj. Whelen): I have never hunted in Kooteney, but I have a number of friends in the Camp Fire Club who have, and they all tell me the same thing, namely, that there is very little game in Kooteney outside of the Preserve, it all having been killed off by half breeds and local white hunters. Cameron and Dorman may be all right, but frankly I am afraid of it, afraid that you will get into the hands of a couple of town loaers, who will throw together any kind of a pack outfit, and take you out anywhere into the hills just so as to get your $15.00 a day. They will show you a few old tracks, and towards the end of your trip they may know where there is an old billy goat which they will get for you. Understand, I may be entirely and absolutely wrong, but from what I know of Kooteney I am afraid of something like this.

The whole trouble with the charges in the guiding have to make in two months enough to last them for the remaining ten. Some of them are also trappers and make good money during the winter, and they could afford to hbarge less were it not for the fact that the hunting season comes just when they ought to be packing their supplies into trapping country, and they have to pay someone else to do it for them. Taking it from every point of view, big game hunting is either a millionaire's game, or else is only possible for the man like myself, who has made a hobby of hunting, woodcraft, and mountaincraft, and who is competent to play a lone hand. From what you say, I think you could probably reach this latter class very easily yourself.

What I would suggest is that you try writing to the postmasters at Barkerville, B. C., McBride, B. C., and Brule, Alberta. Tell them just what you want and how much you can pay. Perhaps you can get ahold of a real woodsman who writes laboriously with stubby lead pencil, who spends all his time in the mountains, who has never before guided, but who has a little prospector's outfit, and who will be willing to take you at your figure. If you can get such a man you will lie in luk.

.38 POSITIVE VS. .38 SPECIAL

WANT just to ask you a few questions. What is the difference between a .38 S. W. Special and a .38 police positive? Do they use the same kind of bullets. I have a .32 Colt automatic, but the barrel is badly worn out, can I get a new very easily?

Hoping to hear from you soon.

(Answer by Maj. Hatcher.)

The .38 Colt Police Positive is a much lighter weapon than the .38 S. & W. Special, and shoots a less powerful cartridge. The following is a comparison of the weight, velocity, and energy of the two bullets:

Calibre	Wt. of Bullet	Velocity	Energy
.38 Spl.	158 grs.	855 f-s	248 ft.-lbs.
.38 Pol. Pos.	150 grs	717 f-s	173 ft.-lbs.

The Police Positive is designed especially as a pocket gun.

The barrel of the Colt. 32 automatic is very easily replaced. It is best to have your dealer send the gun to the factory for you to have this done.

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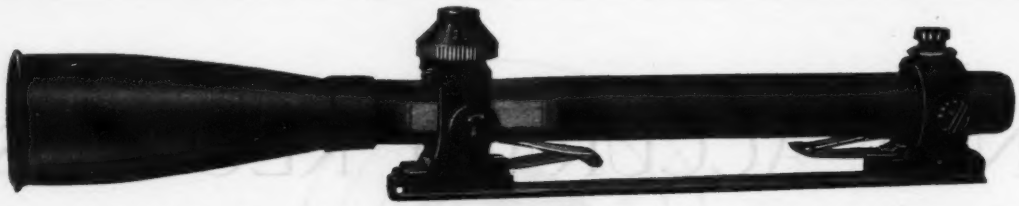

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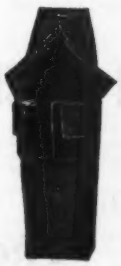

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Realizing that the free rifle game and modern long-range competitive shooting demand a type of target rifle now very difficult to obtain, I am undertaking to assemble and supply such a rifle. At present I am assembling a lot of ten rifles, for which my price will be $175.00 each. These rifles will have special cal. .30 (Gov't Mod. /06) heavy barrels, in Springfield receivers; pistol grip stocks, palm rests; double set triggers; my own style butt plate; sheepskin cheek pad; Lyman No. 48 rear and aperture front sights; 'scope blocks, etc. They will be very similar to the rifles I have used in the International Matches, and will embody every feature that I consider requisite in an arm of this type. Each will be carefully assembled and proved by me personally and will bear my proof mark and guarantee. As accurate and well adapted target rifles they will have no superior in the world. I shall have but the ten ready for delivery this winter. Orders will be accepted only from members of the N. R. A.

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SHOOTING in some one of its branches—at the target, in the big game woods or afield—strikes a responsive chord in every red-blooded American. The shooting fraternity is made up of the kind of good sportsmen your own friends would enjoy. The absorbingly interesting sport they follow is reported twice a month in

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(Signed) .....

.....

APPLICATION FOR INDIVIDUAL MEMBERSHIP IN THE

NATIONAL RIFLE ASSOCIATION of AMERICA

Brig. Gen. FRED H. PHILLIPS, Jr., Secretary,
1108 Woodward Building, Washington, D.C.

Sir:

I hereby request favorable consideration of my application for ..... membership in the National Rifle Association of America, and enclose herewith ..... Dollars, being fee for same.

I certify that I am a citizen of the United States. Age ..... Born ..... in the County of ....., State of .....

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Free Insertions. Each subscriber is entitled to one insertion of one-half inch, when his subscription is paid up for one year. It is necessary only to write or print the text plainly, noting thereon the date subscription was paid. These advertisements will appear in the first available issue and should be in the publication office two weeks prior to the following publication date.

Paid Insertions. Non-subscribers or those who have already made use of the subscriber's privilege may take advantage of these columns at a cost of $1.00 per inch or part thereof. No advertisement for less than $1.00 accepted. Advertisements will be set in 6 point solid. They should be in the publication office two weeks prior to the time appearance is desired.

ANTIQUE AND MODERN FIREARMS (new and used) sold, exchanged, and bought. Large stock—reasonable prices! Stephen Van Rensselaer, 873 Madison Avenue, New York City.

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FOR SALE—New Leather Jerkins, $3.50; Sheepskin coats, $12.00; Swivel Holsters for .45 Auto. Pistols, $4.00; Saddle Bags, $4.00. The above articles are all guaranteed new. We also carry a full line of hunting and camping apparel and equipment. Service Equipment Co., 16 Jefferson Ave., Maspeth, N. Y.

FOR SALE—One Eddystone rifle (Enfield type) manufactured for World War service. Beautifully grained walnut stock. In good condition. H. A. Finch, 3908 McKinley St., Washington, D. C.

FOR SALE—Model 14-D Peerless Grade .32 Remington rifle. Lyman rear and ivory bead front sights. Perfect condition. Price, $80.00. F. H. Bentley, 225 W. Fourth St., Williamsport, Pa.

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WANTED—Star-gauged Springfield. State condition and price in first letter. Theo. Randau, Crystal Lake, Illinois.

WANTED—Owl and crow decoys. Pre-war 9 M. Mauser, stock and action. Winchester 5-A scope. Ballard action double set trigger. Daniel G. Fox, 20 Fernwood Ave., Haverhill, Mass.

FOR SALE OR TRADE—Winchester Carbine, .32-20, Heiser scabbard, Lyman 2a-47 and Sheard gold bead, threaded for silencer, finish spotted. Savage '19, .22, sport stock. Bond .32-20 bushings. WANT—Winchester 95-.30-06 carbine in good condition or $30.00 for the lot. N. La Barre, 131 E. 29th St., New York City.

FOR SALE—8 x 40 Bausch, Leitz, Oigee or Rodenstock field glass binoculars, case, individual eyepiece focus, $9.50. Same by Carl Zeiss, a C. P. Goerz $14.50. 8 x 40 Monoculars $5.00. 6-X Prismatic Monoculars $7.50. 4 x 20 Carl Zeiss or C. P. Goerz Monoculars with case with shoulder strap $4.50. 4½-X Berth & Neumann Hunting Telescope sights with lens protector $10.00. Remember, we give 10 per cent discount on all "American Made" arms. We repair foreign arms and binoculars and field glasses, prompt service. No catalogue. Stockbridge Sporting Goods Company, Stockbridge, Mass.

FOR SALE—Sporting Model Evans, multi-shot, .44 rifle, octagon, factory finish and case hardening, without blemish except small sliver off fore end, probably never fired; exceptional specimen for collector, $20.00. Maynard Model '82 (low hammer type) 20-inch barrel for 22-15-45 W. C. F. ctg., has old time Lyman rigid stem wind gauge peep and extra disc, plain pistol grip stock, complete set Winchester loading tools and several hundred loaded and empty shells; would be fine for use with the new 49 gr. copper jackets and No. 50 Du Pont, $20.00. Ballard 8 lb., 22-inch round Diller re-lined 22 L. R., fair job home bluing on barrel, Schoyen system take-down, plain pistol grip stock, loop lever. Lyman peep with windage head, $20.00. Parker G. H. 10 ga. 9 lb., 30 inches, left cylinder for buck or other layer shot, right full choke, fine wild fowl gun, new stock, has extra pair brand new V. H. 12 ga., 28-inch full choke barrels, never shot except to pattern; gun weighs 8¾ lbs. with 12 ga. barrels, $65.00, complete. All above are in crank condition. W. B. Knoble, P. O. Box 1085, Tacoma, Washington.

WANT—To buy a Colt's Single Action Army Revolver, .45 caliber 7½-inch barrel with perfect action and barrel in good shape. Outside condition not important. G. A. Martin, 156 Wentworth St., Charleston, S. C.

FOR SALE—Ballard rifle, .40 cal., round 26-inch barrel, case hardened frame, peep sights, 300 ctg. Remington-Hepburn, .32-40, Remington ctg., 26 round brown barrel, Swiss butt, cheek piece, peep sights, no rear slot in barrel. Both have fine selected stocks and A-1 condition inside and out. Write and make offer. F. V. Allen, P. O. Box 86, Camden, S. C.

FOR SALE—Winchester Musket; .22 Long Rifle; perfect condition, inside and out, $18.00. C. R. Jeffries, 137 Nevin St., Lancaster, Pa.

FOR SALE—Colt's .38-40 Single Action 7½-inch, with Heiser holster, all in fine shape, $20. Krag Rifle with sling, bore in good shape, $10. One pair Colt's Ivory grips for single action, new, $9.00. Extra .38-40 cylinder, $2. One copy Winan's "Sporting Rifle," new, $3.50. Sharp's Borchardt Rifle, .25-20 Peterson barrel, inside perfect, $10. Stevens' 6-inch Diamond Model Pistol, new, $8. WANT July 15, 1921, copy of "Arms and the Man." Will pay 25 cents. I. M. Massey, 337 East 2d St., Sheridan, Wyoming.

FOR SALE—.32 S. & W. Hammerless blued, new, never shot, $20. .32-20 S. & W. 4-inch, nickel finish, perfect, $23. .380 cal. Remington Auto., perfect, $16. .380 cal. Colt Auto., new, never shot, $16. Above guaranteed as stated. No trades. Wm. B. Parker, 5 Botts Court, Salem, Mass.

FOR SALE—1903 Springfield, cal. .30-06, $28; .38 Colt Automatic, Military Model, brand new, 100 cartridges, $35.00; Model 25 Remington .25-20, brand new, Lyman peep with cup disc, Marbie's folding leaf, Ideal reloading tool, $30; brand new Remington 12 C, Lyman peep with cup disc, 5-B front sight, $24; Model 52 Winchester, perfect, $35; Colt .22 P. P. Target, new barrel, perfect, $20; New Kerr web slings 50 cents each; .25-20 Winchester tool and mould, $4. W. M. Gantt, Box 54, Elmore, Alabama.

RIFLE RESTOCKING AND REBLUING—We rebuild your military rifle in a sporting model and make it shoot as straight as your barrel is good. All rifles given target and working tests before shipment. W. R. McCay & Son, 839 Morton St., New Castle, Pa.

FOR SALE—Springfield Sporter, star-gauged, good condition, handsome hand-made stock, Lyman 48 rear sight. Canvas and leather case, spare parts, $65.00. Krag carbine, No. 103 Lyman rear sight. Original stock reworked, pistol grip and checked, $35.00. S. & W. Special 44 6-inch barrel, practically new, good leather flap holster and belt, target sights, $35.00. H. A. Moser, 490 E. 9th St., N., Portland, Oregon.

NEW ARMY GOODS FOR SALE—Haversack with pack carriers, complete, 75 cents; Web pistol belts, 75 cents; Entrenching shovels with carriers, $1.00; Army axes with carriers, 75 cents; Medical dressing cases (Ambulance Box), $6.00; Army web belts for .30-06 cartridges, capacity 100, 75 cents; Reclaimed Government Kit Bags, 75 cents; Reclaimed Government Ammunition Boxes, $1.00. Also a full line of hunting and camping equipment. No catalogue. Service Equipment Co., 16 Jefferson Ave., Maspeth, N. Y.

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FOR SALE—.577 Double Elephant Rifle, by Charles Lancaster, London, under lever treble grip action. Purdey fore-end and guard. Circassian Walnut, stock beautifully checked, cheek piece, bend 14¼, 1½, 2¼, sighted at one, one fifty, two and three hundred yards, platinum line inlayed in each sight to guide eye, 30-inch barrels, weighs 12 pounds, rifle wonderfully engraved and finished, a masterpiece, never shot and perfect, $200. R. H. Lanferman, 7063 Greenview Ave., Chicago, Ill.

FOR SALE—NO TRADES. One .300 cal. Savage Model 1899, lever action rifle, Featherweight, checked pistol grip stock and forearm, 24-inch barrel, with extra .410 barrel and plush lined carrying case, never shot. Just like it came from the factory. Price, $60. Seven boxes .300 caliber Savage ammunition, 150 gr. soft point Spitzer bullets; price, $11. One Single Action Army Colt's Revolver, chambered for .38 S. & W. Special cartridge, action perfect, fitted with 7½-inch new Officers' Model barrel, with target sight, 2½ pound trigger pull. Shot very little. One Yankee D. A. tool, new, used. One 158 gr. Ideal bullet mould, 200 loaded shells. About 1,000 U. M. C. 6 primers and 400 bullets, moulded up outfit, $35. Either gun C. O. D. for examination. Harry Davison, Box 76, New Franklin, Missouri.

FOR SALE—Malcolm rifle Scope, 4 or 5 power, $10. Vion 40-power spotting scope, $20. B. S. A. Hooded post and aperture front sight and extra apertures, $1.50. Three different sized apertures for Winchester globe and peep front sight, special factory make. Cost $1.50 each; price $1 or three for $2.50. L. B. Reiter, 48 Pittsburgh St., Ashtabula, Ohio.

FOR SALE—Genuine 6.5 Mannlicher-Schoenauer, vred 22 times, with 28 cartridges. Make offer. 8 mm. Mauser 24-inch barrel, $12. 8 mm. Mauser action, sights, set triggers, 24-inch barrel, $12. 20-gauge automatic, $75. .38 D. A. Colt pocket revolver, fine, $12. .45 Colt Automatic "Commercial," $18. .44 New Service, 7½-inch, like new, $20. Riot barrel for Remington Automatic Shotgun, $8. .38 Smith & Wesson Special, 6-inch, like new, $20. WANT—.30 Mauser Automatic, .45 1917 Colt Revolver, $19. Natalish, Stockbridge, Mass.

FOR SALE—Two over and under shotguns 12-12 and 20-20, one combination over and under 12-6.5 mm. Mannlicher-Schoenauer. Best Ferlach make. Unequaled in form and finish, $200 each. Albert L. Gareis, Dumont, N. J.

FOR SALE—One Remington Auto. loading .22 cal. rifle and 850 cartridges, has 1-A Lyman Rear Sight. Shows wear outside. Fine light target rifle, $20. Savage lever action, 1899, .250-3000 take-down and few cartridges, new, shot 3 times, fine condition, $40. Model 52 Winchester .22 cal., with Stevens 468 Scope and blocks, new, shot 150 times, $50. Ross semi-sporter .303 cal., fine condition, $10. WANTED—1903 or 1906 Springfield Sporter. 1922 Springfield .22 caliber. Model 38 Marlin, .22 caliber. Remington Models 14-a, 14-c, 14-d, 14-f, slide action in .30, .32, or .35 caliber. All must be in gun-crank condition. Wm. F. Smith, 5619 North 4th St., Phila., Pa.

TO TRADE—New 20-gauge Remington Repeater, Model 17. Perfect condition, 28-inch barrel, full choke. WILL EXCHANGE—For 12-gauge Hammerless Brush Gun having approximately three-inch drop. Lieut. G. L. Wotkyns, Springfield Armory, Springfield, Mass.

FOR SALE—Lyman No. 103 mounted on Springfield cocking piece, $5; Rexo No. 8 Photo Scale, $3. L. W. Dick, 1135 Bluff St., Dubuque, Iowa.

FOR SALE—Lyman No. 17 front sight (hooded aperture and pin head), fits Springfield '03, never used, $2.50. WILL TRADE—Krag carbine, 26-inch barrel, two sets sights, Kerr sling, Ideal loading tools, shells and bullets, all in fine condition; also 900 rounds Remington .30-'06 ammunition 150 gr. 2700 f. s. for rifle, cal. .22 L. R. Either military model, or single shot with target sights, barrel must be in excellent condition. V. R. Olmstead, 36 Park St., Montclair, N. J.

WANTED—Action for .30-'06 Springfield, with or without bolt. FOR SALE—.30-40 Krag Sporter in fine condition; pistol grip stock, $20. C. W. Ribbe, 1025 Fifth St., Bremerton, Wash.

FOR SALE—Krag Sporter Carbine, gold bead, Lyman No. 34 windgauge, rear, 1917 leather sling, 400 rounds ammunition, gun crank shape. Will ship C. O. D., $26. G. D. Martin, 1707 Main St., Olympia, Wash.

FOR SALE—One Remington Autoloading 12-gauge Shotgun, with two barrels, full and cylinder. Two stocks, one 2 in. and one 2½ drop. In perfect condition inside and out. Will sell for $65. One Stevens-Pope .32-40 No. 3, 30-inch oct. barrel, tapped for scope with full set of reloading tools. In gun crank condition inside and out. Will sacrifice for $85. I. W. Brown, Chester, W. Va.

FOR SALE—15,000 .30 cal. dummy cartridges, corrugated, Model 1906 for Model 1903 rifle, as issued. Price per M, $40. Price per C, $4.50. Transportation prepaid. Terms cash with order. Hollifield Target Practice Rod Co., Middletown, N. Y.

WANTED—Stevens "Lord Model" .25 cal. Gallery Pistol, 10-inch barrel, also Remington .50 cal. 8-inch barrel pistol. Above must be in good condition. What have you in other arms to sell? Henry A. Lambert, 422 Lincoln Ave., Rockford, Ill.

FOR SALE—Colt .45 Automatic, good condition, $22. Colt .45, 1917 Model Revolver, clips, fine condition, $22. TRADE—S. & W. .38 Special, Military, Target Sights, Square Butt, new, for Colt's .45 S. A. 7½-inch, good condition and cash, or will sell for $29. R. Lenny, 2811 W. Oxford St., Phila., Pa.

FOR SALE OR TRADE—S. & W. .22-32 target revolver, absolutely perfect, new condition inside and out, for Remington Model 25 .25-20, new condition, or sell for $27.50. WANT—Lyman or Marbles rear peep and Lyman 5-B for above, .25-20 loading tools, cartridges, cases, primers, powder, etc. Take altogether or separately. Must be in good condition and reasonably priced. George W. Courtney, Winchester, Ind.

FOR SALE—.250 Savage, Model 1899, Pistol Grip, Lyman 30½ peep sight, case, Ideal reloading tool and mould, also 60-87 gr. S. P. bullets, $46.00. All of the above in perfect condition. Colt's .45 Automatic, barrel perfect, outside finish poor, 100 cartridges and two extra magazines, $15.00. A. D. Caswell, 3643 Oliver Ave., North Minneapolis, Minn.

FOR SALE—Super-accurate Model 52 Winchester Rifle, with Gerrish-Souther 14-power telescope and Winchester-Niedner mounts. A tackhole outfit for $75.00. Harry H. Bennett, 142 Portland St., Boston, Mass.

FOR SALE OR TRADE—Three absolutely brand new Winchester target rifles, with octagon barrels, two of these guns are cal. .38-56, one cal. .32-40. Will trade for .22 pistol or 20-gauge shotgun. Or will sell reasonable. Write for prices or what you have to trade. Austin Rifle Club, Marvin Kreuz, Secretary, 618 Colorado St., Austin, Texas.

FOR SALE—Specially selected star-gauged Sporting Springfield. Italian walnut stock, beautifully checkered, 22-inch barrel, sleeve sight, Ivory and gold bead Lyman No. 103 on cocking piece, 7½ lbs., $100. J. N. Garlinghouse, Clifton, N. Y.

FOR SALE—L. C. Smith Ideal Grade 12 ga., 30-inch full choke, auto. ejector, single trigger. Perfect, like new, $65. Savage 1919 .22 L. R. converted sporter, scope blocks, sling, 2 mag., like new, $15. Colt .380 Auto. pistol, like new, with Heiser holster, $15. S. & W. .32 cal., heavy frame target revolver, brand new, with Heiser hand-stamped holster, perfect, $25. Stevens .22 L. R. target pistol, 8-inch, brand new, $8. All guaranteed as represented. NO TRADES. P. O. order or draft only. L. H. Wohlenberg, care Iowa State Sav. Bk., Lyons, Iowa.

FOR SALE—B. S. A. Air Rifle, .22 cal., tang peep sight. First-class shooting condition. 1,000 rounds ammunition, $19. C. A. Chase, 1840 Mass. Ave., Cambridge, Mass.

WANTED—Clips for the Russian 7.62 mm. rifle. .45 Colt Automatic. Barrel and action should be good. Finish may be worn. State price. Walter C. Toble, 3 Deering St., Portland, Maine.

FOR SALE—Smith & Wesson .44 Russian Model, 7-inch barrel, S. A. spur on guard, action good shape, barrel pitted but shoots fine. With loading tools, empty cases and holster, $10. Ralph Tucker, Webster City, Iowa.

FOR SALE—Peterson-Ballard target .22 rifle, 28-inch barrel, 9½ lbs. Stevens 6X scope, double set trigger. Bought July, 1922, $90. First-class condition. Wish $30 check or money order. Reference, Merchants' National Bank, New Bedford, Mass. H. D. Prescott, 26 Grove St., New Bedford, Mass.

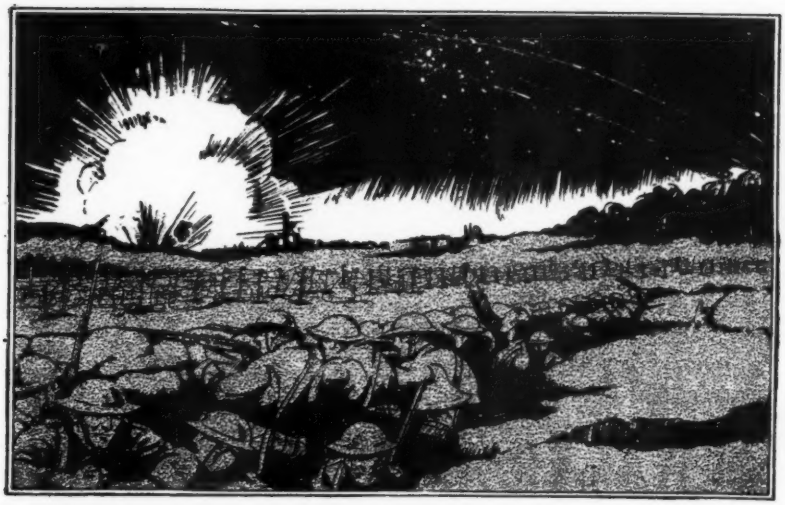
WANTED—Springfield, Model 1922 U. S. .22 L. R., or Winchester cal. .22, L. R. Model 52. Must be a bargain and in perfect condition. W. M. Jones, Box 117, Barnwell, S. C.

FOR SALE—1 Colt .45 Automatic, new condition, store model, target trigger, Andrey holster, 2 extra clips and case with belt, Dotter practice rod and 300 cartridges, $34.00. One Colt .38 Police Positive 5-inch barrel, new, with holster and cartridge belt, $18.00. One pair Peerless hand cuffs, new, $6.00. One Higrade English spotting scope, "Ottway" model by Prod. Equip. Co., heavy cow hide mounting, caps and straps, high and low eye pieces, will spot at 200 yards, also telescope stand, all fine condition, $28.00. One Newton straight line loading tool, Ideal No. 5 powder measure, 1,000 primers, 1,000 service bullets, can of powder and adapter, also about 800 new service loaded cartridges, $25.00. First money order takes or will ship C. O. D. subject to inspection. Paul D. Burress, 1200 Western Ave., Joliet, Illinois.

FOR SALE—.32 S. & W. Hammerless blued, new, never shot, $10. .32-20 S. & W. 4-inch, nickel finish, perfect, $23. .380 cal. Remington Auto., perfect, $16. .380 cal. Colt Auto., new, never shot, $16. Above guaranteed as stated. No trades. Wm. D. Parker, 5 Botts Court, Salem, Mass.

FOR SALE—New No. 1 grade 10-gauge Ithaca double hammerless, 32-inch full choke, fine damascus barrels. First $35.00 M. O. takes it. Remington-Hepburn heavy target rifle .45-70, few pits, $5.00. .45 Colt revolver attachment, only for Bond tools, new, $4.50. WANTED—Springfield carbine .45-70. Remington .58 cal. muzzle loading rifle, model 1863, brass mounted. Cap and ball revolver .36 or .44 cal. E. Richard Page, Norman, Oglahoma.

FOR SALE—Stevens No. 44-40, .22 short vernier peep tang, globe aperture front, palm rest, adjustable trigger pull, barrel like new, bargain at $12.50. WANT—Stevens or Winchester repeating 12-gauge. E. M. Stukas, Clinton, Iowa.



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Remington Palma Scores Again

THE WEST TEAM

Standing—Left to Right: A. F. Goldborough, F. I. King, H. Smith, E. H. Henderson, Frank Payne, A. L. Thomson.
Sitting—Left to Right: J. P. Becker, W. G. Hansen (Team Captain), Lieut. G. L. Wotkyns (Team Coach), Maj. J. K. Boles.

Next to the International Small-bore Classic (the Dewar Team Match), the East-West Match at Camp Perry this year created the greatest interest and enthusiasm of any competition held on the small-bore range. The very nature of the match assures the keenest competition and sectional rivalry among the contestants. Thus, marksmanship of a very high order is to be expected.

The West Team won because it was the best team. It was no accident nor a coincidence that seven of the eight members of the West Team and twelve of the sixteen shooting members of both teams shot Remington Palma .22 Long Rifle Cartridges.

This important event for the beautiful Marksman Trophy (presented to the N. R. A. by the Western Cartridge Company) will be competed for annually.* To be a member of either team may be regarded as a very high honor. When shooting in such an important event, always select the ammunition which makes high scores and wins the majority of the matches.

The West Team

	150	*175*	*200*	*Total*
*F. I. King	75	73	73	221
*A. F. Goldborough	74	75	72	221
*F. C. Payne	74	75	72	221
*A. L. Thomson	75	75	71	221
*E. H. Henderson	75	74	71	220
J. K. Boles	73	74	71	218
*H. Smith	72	74	70	216
*J. P. Becker	74	75	67	216
Totals	592	595	567	1754

The East Team

	150	*175*	*200*	*Total*
*R. H. McGarity	75	72	75	222
*A. F. Bronwell	74	73	74	221
*J. E. Miller	74	74	73	221
G. H. Emerson	75	74	70	219
R. V. Reynolds	75	75	69	219
W. V. Mounts	73	75	70	218
*C. S. Hogue	75	75	68	218
*R. H. Betts	75	70	67	212
Totals	596	588	566	1750

*Shot Palma.

DON'T WORRY- - Don't worry about the other fellow's Score. Let him worry about yours.
SHOOT
REMINGTON PALMA
The Premier Cartridge